Factors that increase or decrease first-year university students' levels of academic self-efficacy and negative emotional states in Chile

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ABSTRACT

First-year university students experience a transition from school to college, involving new academic demands (Cole, 2017). Some researchers have focused on the relevance of cognitive ability (Wai & Rindermann, 2017). Others have argued that it does not guarantee academic achievement (Nabizadeh et al., 2019). Students also require other resources, such as their beliefs in their capacity to perform a task (Bandura, 1977). Emotions and negative emotional states influence students' cognitive development and performance (Pekrun et al., 2002) and their judgments of academic self-efficacy (ASE) (Bandura, 2010). This study explores factors that positively or negatively influence first-year university students' levels of ASE and negative emotional states (i.e., stress, anxiety, and depression) over 6 months while attending a Higher Education Institution (HEI) in Chile.

I collected longitudinal data from a convenient sample of 311 first-year students in the Faculty of Education and Social Sciences enrolled in 2019 at a large university in Chile. I administered questionnaires at two points and used Haye's PROCESS Macro for SPSS version 22 to undertake a regression-based path analysis using mediation analysis and moderation analysis. The results showed that: (a) Harmonious Passion and Perceived Academic Control (PAC) at Time 2 (T2) mediated the relationship between Intrinsic Motivation (IM) at Time 1 (T1) and Academic Self-efficacy (AES) at T2, but Obsessive Passion at T2 did not contribute to the model estimation; (b) IM at T2 mediated the relationship between Gratitude at T1 and ASE at T2, and the indirect effect was moderated by Anxiety at T1; (c) PAC and Gratitude at T2 mediated the relationship between Stress, Anxiety, and Depression (SAD) at T1 and ASE at T2; and, finally, (d) PAC at T2 mediated the relationship between Factor Differentiation at T1 and SAD at T2, and the indirect effect was statistically significantly moderated by IM at T1.

HEIs have to become alert of the factors that influence negative emotional states and threats or opportunities that undermine or facilitate students' ASE to understand how to help them, especially when they experience academic challenges to advance in college successfully. Finally, future researchers should investigate the reliability of the finding that OP did not play a role in mediating the effect between IM and ASE in the Chilean context and should explore the association between controlled motivation and OP for bringing light.

Keywords: *First-year University students, academic self-efficacy, negative emotional states, emotional granularity, motivation.*

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Table of Contents

List of Tables

List of Figures

Glossary

Academic Self-efficacy (ASE)
Dualistic Model of Passion (DMP)
Factor Differentiation (FD)
Intrinsic Motivation (IM)
Harmonious Passion (HP)
Higher Education Institutions (HEIs)
Obsessive Passion (OP)
Perceived Academic Control (PAC)
Statistical Package for the Social Sciences (SPSS)
Stress, Anxiety, and Depression (SAD)
Structural Equation Modeling (SEM)

Chapter 1. Introduction

Higher Education Institutions (HEIs) are challenging environments especially for first-year University students due to a variety of stress factors related to their adjustment to college (Fila & Eatough, 2017). Some researchers have examined the relevance of cognitive ability for achieving academic success, and they have claimed that it can predict students' developmental trajectories (Makel et al., 2016). Others have claimed that young adolescents with high levels of intelligence become high-achieving adults (Wai & Rindermann, 2017); however, there might be other competencies that people require to function successfully, which are not only related to cognitive ability (Blazquez et al., 2018). For example, academic self-efficacy, which is a personal resource, plays a relevant role in students' educational experiences during their college journey and their academic accomplishments (Bandura, 1994; Nabizadeh et al., 2019).

For nearly two decades, I have witnessed how first-year university students struggle during their transition to college; for example, several of these students feel insecure, stressed, anxious, and depressed, impacting how they perceive challenging situations (Stupnisky et al., 2013). Therefore, their levels of negative emotional states can impact their learning and, consequently, intervene in their developmental paths (Kumari et al., 2019). Also, I have seen students' academic self-efficacy falter, which has affected their effort to persist in tasks (Bandura 2010), and they end up abandoning classes. Despite all my energy invested in searching for ways to support students, I have failed many times. Several of them do not succeed academically, and they enrol in my class again. Others lose hope and decide to drop out college. I have reflected on reasons that can become the obstacles they struggle with every day, reasons different from students being cognitively ready or not for university academic demands. Thus, before the current study, I undertook a qualitative investigation with first-year undergraduate students. I developed my reflections on the relevance of emotions and emotional states to determine whether these

impact students' academic studies and self-efficacy beliefs. McMillan (2016) concluded that emotions might be essential predictors of academic self-efficacy because they interfere with students' abilities to overcome academic challenges. Kumari et al. (2019) argued that negative emotional states influence students' capacity to handle academic challenges because they influence cognitive functioning and learning. Accordingly, the question is why are some individuals more successful or enjoy more significant levels of personal resources than do others with equal intelligence? The current research explores various factors that positively or negatively influence first-year university students' levels of academic self-efficacy and their negative emotional states. More specifically, it reports on an investigation into variables that become the threats or opportunities that undermine or facilitate students' academic self-efficacy levels (Sharon & Grinberg, 2018). Finally, it explores variables that increase or decrease students' negative emotional states, such as stress, anxiety, and depression (Barret et al., 2001) over an academic semester.

1.1. Background

Over the past 17 years, I have taught first-year university students at a large HEI in Chile, and have seen how many of them fail classes. Some clues can explain this phenomenon. Until 1980, there were two State universities and six private universities in Chile, known as the traditional universities, which, in turn, were historically financed by the State until 1980 (Bernasconi, 2015). In 1981, during the Pinochet dictatorship (1973-1990) and the neoliberal reforms, the creation of an educational market emerged to activate the economy, represented by the proliferation of the new private HEIs (Guzmán-Valenzuela, 2017). Moreover, that same year, 1981, the traditional universities were decentralised and regional campuses were created as autonomous universities (Bellei et al., 2014). The expansion of the private sector grew from being 15% of the university population in 1990 to 53% in 2011 (Fleet & Guzmán-Concha, 2017).

The rapid growth of HEIs and of the overall student population between 1982 and 1997 yielded challenges, such as those related to the quality of the education system. The quality standards of the new private HEIs, those created after 1981, were questioned, and it was not until 2006 that the State created and implemented a quality assurance system and several accreditation agencies to evaluate and to regulate the quality of HEIs (Guzmán-Valenzuela, 2017).

In 1981, the State declared a reduction of the funding of the public and private universities and they were forced to be increasingly partially self-funded (Guzmán-Valenzuela, 2017). Thus, private HEIs had to compete with the public HEIs for student recruitment and funding, and both began to charge students' fees. Also, Bellei et al. (2014) highlighted the consequences of the implementation of a system of subsidised credits and loans to finance tuition fees. They concluded that, in 1990, with the return to democracy, the structure of HE remained the same, and an increased indebtedness left many students with economic vulnerability after graduation. Thus, students' movements began to emerge at the end of Pinochet's dictatorship (1973-1990) and continued up to date because of the feelings of injustice and indignation, which have increased in present times (Guzmán-Concha, 2012).

The most influential movement in 2006, called the "penguins' revolution," questioned the way the administrators had governed since the dictatorship and their influence on the education system calling for profound educational reforms based on free education (Guzmán-Concha, 2017). Then, in 2011, the most significant students' movement in Chile occurred, which was connected to challenges related to the lack of quality, equity, and social mobility (Guzmán-Concha, 2017). More than 20,000 students gathered to address problems related to the education system and the persistent inequality (Mayol & Azócar, 2011). Students took to the streets and shouted: "for public, quality and free education for all" (Guzmán-Concha, 2017, p. 33). It was

clear that there were feelings of injustice and disillusion that had never been adequately addressed (Guzman-Concha, 2012).

The 2011 movement reflected a variety of context factors, such as the long-term historical perceptions that the political regime was unresponsive (Mayol & Azócar, 2011). Also, the massification of the new private higher education institutions, which account for more than three-quarters of the universities in Chile, and the lack of regulation that provoked massive disparities in terms of quality, represented another factor connected to the civil unrest (Guzman-Concha, 2012). Moreover, the state-sponsored university loans have increased the indebtedness of families, especially to the first-generation students from disadvantaged backgrounds or from low socioeconomic stratum, who represented 69% of the total (Fleet & Guzmán-Concha, 2017; Orellana, 2011). Consequently, there is a significant number of students who have left higher education with no degree but debt (Guzman-Concha, 2012).

Income and social inequalities have evolved since 1990, and they remain (Kennedy & Murray, 2012). It is important to add that Chile went through a neoliberal transformation of the state, the economy, and social policies, which began with a privatisation process during the 1970s and 1980s. According to Aldunate et al. (2020), the objective was to begin selling state-owned firms to new business groups, in modern democratic Chile, to activate the economy to become more productive. Another example of the privatisation process and the neoliberal reforms relate to the education system and the proliferation of the private HEIs mentioned in previous paragraphs. Palma (2014) mentioned that only in the 1990s and between 2006 and 2010, the State invested more in the health and education sectors than in any other years. He claimed that there is a high degree of segregation in the health and education sectors. For example, the low-income segment of the population has access to the public health system, and the high-income stratum of society uses the private health system, which is of high quality (Fleet & Guzmán-Concha, 2017).

It is relevant to mention that Chile has experienced exponential economic growth over the past two decades. Palma (2014) highlighted that several new public policies, such as the creation and implementation of social programs at the bottom of the income distribution, have taken place since 1990, and the level of poverty has reduced. However, challenges related to equity persist (Guzman-Valenzuela, 2016). Even though the economic progress has placed Chile above the other countries from the region regarding gross domestic product per capita, it is far below many others, such as Argentina, Uruguay, and Costa Rica, in terms of social inequalities (Palma, 2014).

In the case of education, traditional universities represent the most prestigious institutions, which receive the social elite (Guzmán-Valenzuela, 2017). In contrast, the so-called second-class universities, which belong to the new private education sector, receive the majority of the students' population (Fleet & Guzmán-Concha, 2017). These institutions have been questioned in terms of the academic quality that they offer (Guzmán-Valenzuela, 2017). Thus, there are challenges related to equity within the education system. For instance, the Programme for International Student Assessment (PISA) scores in science are below the Organisation for Economic Co-operation and Development (OECD) average and are mainly connected to socioeconomic backgrounds (OECD, 2018). Therefore, although it seems that members of the low socioeconomic stratum invest in their education (OECD, 2015), the returns on their investment have generally been disappointing. For example, there are economical and socio-cultural restrictions that individuals from lower classes experience when they attempt to enter elite universities (Cabrera & Andreu, 2016). When low-class students enrol, most of them do not experience higher education to the full because of the high social cost they might encounter (Boliver, 2017). It is challenging for families from a working-class background to improve their material circumstances due to socioeconomic inequalities in society, which mirrors the lack of social cohesion (Manstead, 2018). As a result, students with lower cultural and social capital tend

to enrol in second-class universities, which is why there is a low intergenerational social mobility that impacts the degree of social integration (Dumais & Ward, 2010).

Finally, it is important to mention that aggressive civil protests were present again in Chile between October 2019 and January 2020. The explosion of this social crisis happened on October 18th, 2019. High school students initiated the protest against the increase of the Metro fares in Santiago, and soon the tertiary and higher education sector joined them. The civil complaint mirrored the anger and the civil unrest described in the previous paragraph. The situation worsened as a group of people began to attack several Metro stations in Santiago violently. Besides, several incidents of the looting of supermarkets, pharmacies, and service stations occurred, which lasted for weeks, symbolizing the worst civil unrest in the history of Chile. The scale of damage to public infrastructure was brutal, even more astonishing than the one that occurred during the looting of the 27/F (February 27th) earthquake (Carrasco-Jiménez, 2019). The 2019 protests expanded to other cities in Chile; consequently, the president announced a state of emergency.

To conclude, the social movements have reflected the long-standing grievances and abuses that Chileans, in general, have experienced over three decades. The lack of equity and social mobility and the high degree of social segregation palpable in the education sector described earlier have increased people's anger, disgust, fear, and feelings of injustice and indignation that never have been adequately addressed (Guzman-Concha, 2012). These long-term intense and repeated emotions put individuals' well-being at risk (Lazarus & Folkman, 1986) and finally resulted in psychological disturbances such as anxiety, stress, and depression, classified as negative emotional states (Cowie et al., 2001), evidenced and still present among Chileans. Thus, the explosion of the several students' movements and the social unrest in Chile are the expressions of the type of emotional states that students are still experiencing. The significance,

intensity, and quality that students give to their emotions and emotional states might influence their personal resources, such as their self-efficacy beliefs (Bandura, 1994; (Respondek et al., 2017), their "cognitive processes and performance" (Pekrun et al., 2002, p. 92), and their levels of academic achievement (UL Haq et al., 2018). Perhaps, their attention is focused on the feelings of injustice and anger and not precisely on their interest, motivation, or passion towards their studies. When writing this thesis, the civil protests were on hold due to the Coronavirus pandemic. Even though the data collection process had concluded before the protests started, the findings might contain hidden discontent in peaceful times. It is crucial to consider the impact of the unresponsive closed political institutions, the accumulated social resentment due to long-standing grievances, and the indignation and civil unrest to contextualise this phenomenon in Chile (Guzman-Concha, 2012).

1.2. Purpose, Originality, and Significance of the Study

Students withdraw in their first year of college more than in any other year because it is a transition process (Cole, 2017) in which academic demands and emotional experiences are more challenging than in school (UL-Haq et al., 2018). According to Gale and Parker (2014), there are three broad conceptions in the research literature on the transition into Higher Education (HE). The first approach relates to induction (students' orientations to college), the second to transition as development (focusing on the development of HE students' identity), and the last relates to "thinking about transition in HE in socially inclusive ways" (p. 735) (the need for HEIs to focus on how to adapt to students' realities, ways of learning, and to consider their interests and perspectives). The authors concluded that the first two categories of transition focus on students' integration into college life for them to reach engagement and to have more chances to succeed academically. The third category focuses on the transformation or adaptation of teaching practices to the students' needs.

One of the challenges that my university has experienced relates to the strategies implemented to prevent at-risk students from failing and so avoiding early dropouts. The literature connected to this topic suggested a variety of support actions, such as peer-assisted learning (Carbone, 2014) and learning community programmes (Sperry, 2015), to promote learning in inclusive and collaborative environments to contribute to college adjustment, and to provide better chances to succeed academically (Alzahrani & Leko, 2018). Academic leaders at my institution have focused on developing students' learning skills and strategies, cognitive abilities, communication, reading comprehension, and writing skills to support them during the transition into college. However, little of this work has been focused on learning about students' emotions, emotion regulation abilities, internal states, perceptions of their academic control, or motivational processes that interfere with their academic self-beliefs and emotional states. Consequently, the impact of those initiatives has not been significant.

I considered the challenges that my HEI has experienced to support students and why the impact of the initiatives described earlier has not been significant. Also, I reflected on what factors or variables could be impacting students' self-efficacy beliefs and emotional states. Therefore, I engaged in a critical review of the literature related to these topics and learned about how emotions and emotional states can influence cognitive processes and performance (Oriol et al., 2016; Pekrun, 1992; Pekrun et al., 2002; Respondek et al., 2017) and individuals' judgments of self-efficacy (Bandura, 1994, 2010). I found these relations intriguing to explore in the Chilean context. Also, several researchers have advised paying more attention to students' ability to regulate negative emotional states because they interfere with the development of personal resources and long-term academic skills (Barret et al., 2001; Kumari et al., 2019). Others have claimed that students can modify or strengthen their self-efficacy beliefs by reducing negative emotional states (Bandura, 1994). When students perceive themselves as being in control over

challenging activities, they perform better than if they do not (Deci & Ryan, 1985). Finally, students' background characteristics, such as their family socioeconomic status and socio-cultural capital, can become relevant predictors of students' academic performance (Oranye et al., 2017). Therefore, the more I learned about these factors, the more enlightening I found it to study and to analyse the various relations among them in the Chilean context.

Several researchers have focused on competence as the basis for individuals' self-motivation (Deci & Ryan, 2000). They have stated that motivational processes are partly governed by self-efficacy beliefs (Bandura, 1994). However, I aimed to combine and to analyse these variables from a different angle; so, I predicted the inverse relationship based on the literature on motivation and self-efficacy. I intended to identify how autonomously self-motivated and passionate about academics were students from the Chilean context and if this influenced their perceived academic beliefs. These results were a contribution to my work environment and the Chilean HEIs.

Because humans are highly social, it is crucial to focus on the social functions of emotions referred to as self-transcendent emotions, which have recently begun to receive considerably more empirical attention (Stellar et al., 2017). Studies on self-transcendent emotions have focused on religious, spiritual well-being, philosophical and theological accounts, and social perspectives, and little has been associated with academic settings, which is why the current research sought to contribute to educational contexts. Besides, several studies have focused on positive emotions and how these promote personal resources, such as self-efficacy (Fredrickson, 1998, 2000a, 2001, 2004). However, there is a need for more research building on the link between positive emotions, such as gratitude and self-efficacy in college students, which is precisely the gap that I intended to fill in within the broader literature. Consequently, this analysis

provided substantial evidence of vital significance in understanding the influence and the power of students' positive emotions on their self-efficacy beliefs in academic settings.

Another important contribution of the current study to HE was that the findings might allow leaders to make appropriate academic decisions based on the evidence. Also, the findings provide the foundation for future research on the development of efficient support services and effective programs to prevent academic stress and its negative effects and to develop students' perceptions of their academic control. For example, these programmes could teach students strategies to become aware of emotions and to develop the ability to differentiate their emotional states. Thus, it gives students light as to ways of regulating emotional states to withstand stressful situations (Pond et al., 2012) and to influence features of adaptation, known as primary control (Gross, 2015), the perceived capacity to influence one's environment (Perry et al., 2005). Also, the results of the study might allow the identification of the triggers and buffers of mental health problems, thereby allowing future researchers to design instructional and counselling strategies crucial for early detection and psychological consultation (Tang et al., 2018) that can assist students in need, increase their life satisfaction in college, and promote long-term learning and well-being. It is crucial to remember that contributing to students' well-being not only is about their human rights but also is an investment for the future of societies. Finally, most of the literature on emotions linked to academic success has been cross-sectional, making it challenging to establish causal relationships and effects (Pekrun et al., 2017). Therefore, this proposed study involved testing longitudinal hypotheses at two points over a 6-month timeframe to seek robust conclusions and to bring new insights. Time was a relevant component in this Thesis and I was interested in analysing whether the variables that undermine or facilitate students' academic self-efficacy levels and the variables that increase or decrease students' negative emotional states, might be affected by time. To summarise, the findings of the proposed research were an original

contribution to the field of academics because I aimed to combine and to analyse variables from a different angle over the course of an academic semester.

1.3. Research Question

The following research question was addressed: What factors influence positively or negatively students' beliefs in their academic self-efficacy, and what increases or decreases their negative emotional states, such as stress, anxiety, and depression over a period of time while attending a private and large Higher Education Institution in Chile?

General objective. The overall objective was to investigate the factors that positively or negatively predict first-year university students' academic self-efficacy levels and negative emotional states levels at two points over the course of 6 months.

Specific objectives. The specific objectives were as follows: (a) to examine factors that positively or negatively influence first-year university students' academic self-efficacy levels; (b) to examine factors that increase or decrease students' negative emotional states; and, finally, (c) to link students' responses collected during Time 1 and Time 2 to their levels of academic self-efficacy, stress, anxiety, and depression with approximately a 6-month timeframe to examine the possible relations among the variables of the study.

1.4. Research Setting

There is a significant percentage of students at my institution who experience socio-cultural challenges and academic or economic demands. Almost 58% of the students who enrol are first-generation students (Universidad Andrés Bello, 2017). Their educational and psychosocial outcomes are weak, and their resources are scarce, compared to other students whose parents have at least some tertiary education (Padgett, Johnson, & Pascarella, 2012). Moreover, 80% of the students belong to a low socio-cultural and economic background (Universidad Andrés Bello, 2017). In the case of the Faculty of Education and Social Sciences,

students with state-sponsored loans have increased over the past 3 years, from 54,4% in 2017 to 61,2% in 2019.

The unit of analysis of my investigation was every first-year university student in the Faculty of Education and Social Sciences enrolled in 2019 at a large and private university in Chile. Students from the following nine programmes participated in the study: Physical Education, Elementary Education, Music Education, Preschool Education, English Pedagogy Education, Psychopedagogy, Psychology, Sociology, and Social Work at the following three venues where they were taught: Santiago City, Viña del Mar, and Concepción. The total number of students enrolled in the Faculty of Education and Social Sciences in 2019 was 1,845. However, after 4 months of the academic year's start date, 79 of them had temporarily withdrawn. The reason was mainly financial and health related. To achieve a 95% confidence level, I needed a total of 319 responses. This sample, which will be explained more in Chapter 3, was considered suitable to address the proposed research questions.

1.5. Organization of Thesis

Chapter 2 reviews the literature that includes the theoretical basis and concepts for the current study. It will present the theoretical background of the thesis under investigation and the factors that influence positively or negatively students' levels of academic self-efficacy and factors that increase or decrease students' negative emotional states (i.e., stress, anxiety, and depression).

Chapter 3 focuses on the methodology that addresses the study design, which, in turn, delineates the purpose of the study, explains the epistemological basis for the research, and justifies the specific perspectives on knowledge behind the methodological approach. Moreover, the variables of the study are defined as well as the hypotheses, which are based on the discussion

presented in the literature review. Also, it provides details on the research sample, each of the methods used to collect data, and the process of analysing the data collected.

Chapter 4 presents the findings of the study. The purpose is to present a preliminary analysis of the data that includes a descriptive analysis and Pearson's *r* correlation for each of the variables of the current research Thesis. Finally, I will report the results of the analysis of each of the hypotheses regarding the mediation and moderation models.

Chapter 5 involves a discussion of the research findings. The purpose is to reflect on the findings of the current Thesis and to contrast them with those presented in the literature review.

Chapter 6 presents the conclusions of the study and summarises some of the internal and external validity to reflect on the limitations of the findings and threats to legitimation. It includes recommendations that can be explored and expanded in future research to be further developed.

Chapter 2. Review of Related Literature

First-year university students experience a critical transition in preparation for a successful college journey (Deen & Leonard, 2015), and they are the most susceptible to academic failure (McMillan, 2016). This research aims to explore factors that undermine or facilitate first-year university students' academic self-efficacy levels and those that increase or decrease students' negative emotional states over an academic semester. The following section addresses a review of essential concepts that allows an in-depth understanding of emotions, emotional states, and academic self-efficacy.

2.1. Positive and Negative Emotions, Emotional States, and Academic Emotions

According to Cowie and Cornelius (2003), "emotions are episodes that are relatively brief and highly distinctive" (p. 6). Cowie et al. (2001) argued that *emotions* are usually intense, and *emotional states* are mental states where emotions play a central role. They added that even though emotions are generally short-lived, if they are repeated—that is, if emotions last in time—they generate an emotional state. Thus, emotional states are influenced by emotions that can be either positive or negative appraisals of people. For instance, sadness is an emotion that, when it lasts, it can produce depression, a negative emotional state likely to continue until something happens to end it. Fredrickson (2001) claimed that "an emotion begins with an individual's assessment of the personal meaning of some antecedent event" (p. 218); emotions relate to meaningful circumstances, either conscious or unconscious, which produce responses such as cognitive processing and physiological changes. According to Barret (2017), "an emotion is a brain's creation of what the body sensations mean, in relation to what is going on around the person in the world" (p. 30). Positive emotions play a vital role in students' learning processes (Oriol et al., 2016). Negative emotions, in contrast, lead to the development of psychological disturbances (Tang et al., 2018) and "narrow people's momentary thought-action repertoires"

(Fredrickson & Losada, 2005, p. 2). Therefore, the more students become aware of their feelings, the more chances they will have to regulate and to control their emotions (Oriol et al., 2016).

Pekrun et al. (2002) argued that "emotions influence students' cognitive processes and performance" (p. 92). In particular, they referred to those emotions that are connected to academic learning, which they called academic emotions. Emotions have relevant implications in cognitive resources (e.g., self-efficacy) and motivation because they influence individuals' learning and performance (Pekrun et al., 2004). Even though several researchers have focused on the impact of emotions on cognitive performance, there could also be reciprocal causation (Pekrun et al., 2017). Similarly, Pekrun (1992) tested how emotions influenced students' learning and performance and stated that emotions and academic achievement reciprocally influenced each other. Bandura (1994, 2010) added that emotions also affect people's self-efficacy judgments and that positive emotions enhance self-efficacy; however, low-spirited moods decrease it. Therefore, the present study highlighted the relevance of analysing what factors influence positively or negatively students' beliefs in their self-efficacy and their levels of negative emotional states such as stress, anxiety, and depression.

The following section provides the theoretical background of the current Thesis. It begins by explaining the two systems involved in decision-making and how emotions and cognitive processes intertwine.

2.2. Theoretical Backgrounds

2.2.1 Kahneman's Theory: System 1 and System 2

Kahneman, a prominent psychologist in cognitive science, developed an alternative account of decision making called "prospect theory" and won a Nobel Prize in economic science in 2002. Later, he claimed in his book, "Thinking, Fast and Slow," that there are two systems responsible for decision making, and he described the behaviours that emerge from these two

processes. *System 1 is fast* and involves intuitive and automatic decision-making *based on emotions*. *System 2 is a slow and cognitive process* that starts with the impressions caused by System 1 (emotions) as the basis for the resulting analytical process that frequently produces rational and logical arguments that validates the decision making (Kahneman, 2011). For example, a student feels scared about a test, and so fear is the emotion that provokes the student to experience high levels of negative emotional states, such as anxiety and stress. Thus, the student immediately calls his/her psychiatrist (System 1). Reflecting on this example, according to Kahneman's theory, the student experienced an immediate need and made a decision based on an emotion (fear), which explains why intuitively and fast he/she decided to search for help (the psychiatrist). Another alternative decision is that the student considers smoking a cigarette instead; however, after reflecting for a moment, he/she decides not to do it because it is bad for health and goes for a walk as a choice to release some tension (System 2). In other words, the first intuitive and automatic reaction to his/her emotion was to have a cigarette as a distraction and a way to release tension. However, later he/she re-evaluated and reflected on the long-term consequences of smoking. Consequently, this slow and cognitive system (System 2) gives the opportunity to observe, to analyse, and to collect the evidence to decide for or against the initial emotion. To conclude, Kahneman's System shows that emotions can influence cognitive processes.

Positive emotions broaden cognition and generate enduring and long-lasting personal and cognitive resources, whereas negative emotions narrow cognition (Fredrickson, 2000b). The following section addresses Fredrickson's theory, which is relevant to the study of emotions.

2.2.2 Broaden-and-Build Theory

Fredrickson's broaden-and-build theory states that when individuals experience positive emotions as stable, their personal and cognitive resources increase. This effect enables flexible

and creative thinking because these emotions generate enduring and long-lasting personal resources, such as self-efficacy (Fredrickson, 2000a, 2001). Thus, positive emotions widen individuals' thoughts, facilitating generativity and behavioural flexibility (Fredrickson & Losada, 2005). Fredrickson (2000b, p. 3) defined "broadening as having in mind a wider array of perceptions, thoughts, and actions" and highlighted that flexible, creative, and unusual thinking are consequences of broadening. Fredrickson (1998) concluded that there is empirical support for claiming that positive emotions broaden cognition and negative emotions narrow cognition.

Frederickson (2000b) stated that the effects of positive and negative emotions are different and complementary. She provided empirical support for what she called the *undoing effect*, which is the capacity of positive emotions to regulate the aftereffects of negative emotions. For example, positive emotions help exchange a narrow thought-action repertoire for a broader one, allowing people to search for different thoughts and actions to replace the negative ones, building and strengthening their personal resources (Fredrickson,1998). In negative emotional states, such as anxiety and stress, the theory claims that these have the opposite effect and function of positive ones. For instance, when people experience negative emotional states, the mind focuses on the imposing threat, and their ability to be open to new and creative ideas and to build resources decreases (Frederickson, 1998). To conclude, Fredrickson (1998) added that positive emotions play an essential role in our survival and increase individuals' personal resources to later use in other emotional states, situations, and contexts. This argument gave the name to her theory as the broaden-and-build model.

The following researchers reported empirical findings that positively influenced positive emotions on personal resources such as self-efficacy. Ouweneel et al. (2011) found out that university students' positive emotions at Time 1 were positively related to self-efficacy, hope, and optimism at Time 2. In another study, Rogaten and Moneta (2015) revealed a connection

between positive emotions and creative cognition. Salanova et al. (2011) provided empirical evidence based on two different samples, secondary school teachers and university students. Their research contributed to understanding how positive emotions and efficacy beliefs operate over time. The participants' beliefs of efficacy and engagement influenced each other by first experiencing positive emotions. Hence, and based on Fredrickson's broaden-and-build theory and Kahneman's theory explained earlier, the current study also analysed the effect of gratitude, a positive emotion, on students' self-efficacy, a personal and cognitive resource.

The following section begins with the concept of self-determination and its connection to related constructs. Then, it expands on the concept of motivation and intrinsic motivation and finally presents the Self-Determination Theory, which has become the theoretical framework in several studies that have focused on students' motivation (Dyrberg & Holmegaard, 2019).

2.2.3 Self-Determination Theory

Self-determination, locus of causality, control, and competence. Skinner (1996) argued that the need for *self-determination* or *autonomy* is confused with the need for *competence*. She highlighted that the former refers to the "innate desire to experience one's true self as the origin of one's own actions," and the latter refers to "the desire to experience oneself as effective in producing and preventing desired and undesired outcomes" (p. 557). Deci and Ryan (1985) argued that the need for *self-determination* is "closely intertwined with the need for *competence*" (p. 32). Both maintain people to continue searching for optimal challenges. They added that *self-determination* relates to people's capacity to experience choice— "the experience of an internal perceived *locus of causality*" (p. 38). It is also a need, an important motivator, and fundamental to intrinsic motivation. Thus, when people are self-determined, the perceived locus of causality is internal (Deci & Ryan, 1985). They autonomously engage in the activity because they want to, enhancing intrinsic motivation (Skinner, 1996). Contrary, events that lead to an external

perceived locus of causality control behaviour and undermine self-determination and intrinsic motivation (Deci & Ryan, 1985).

Even though there are differences between the concept of *control* and *self-determination* (Skinner, 1996), they also can be related. For example, to be self-determined, people need to control their outcomes, but feeling the pressure to control does not relate to self-determination (Deci & Ryan, 1985). According to Deci and Ryan (1985), "*control* refers to there being a contingency between one's behaviour and the outcomes one receives, whereas *self-determination* refers to the experience of freedom in initiating one's behaviour," which is why to be self-determining is to have the freedom of choice (p. 31). The authors concluded that people could focus on their intended outcomes and be determined by them, or they can be determined by their freedom of choice, free from dependence on results. Even though having perceived control over situations is optimistic based on the concept of a need for self-determination, people do not always want to be in control but instead want to choose to be or not to be in control (Deci & Ryan, 1985).

Motivation. According to Brophy (1982), motivation is the energy that fosters people to make choices and to focus on a particular direction. The author added that learning exists when students find a task meaningful, and they take it seriously, even if they do not see it as exciting. Thus, motivated students have a personal interest in an activity, which is why they learn (Linnenbrink & Pintrich, 2002). Finally, "motivation is an energized internal state that results in goal-directed behaviours"; consequently, students conquer challenges, feel capable of learning, and they are willing to engage in new learning objectives (Schunk et al., 2014, p. 5).

Intrinsic motivation. Intrinsic motivation is an internal state and a desire that directs goal-orientation behaviour (Deci & Ryan, 2000). Intrinsic motivation (IM) is "the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore,

and to learn" (Ryan & Deci, 2000, p. 70). IM is defined as the "motivation to engage in an activity for its own sake" with a high personal interest in the task (Linnenbrink & Pintrich, 2002, p. 318) and freedom of pressures (Deci & Ryan, 1985). Also, individuals freely engage in an activity they like because they find it enjoyable, exciting, and rewarding and do not need any external constraints (Deci & Ryan, 2000; Schunk et al., 2014). Deci and Ryan (2000) stated that their research on IM resulted in their interest and focused on individuals' psychological needs. In other words, IM for the task comes from within, and it increases when psychological needs are reached (Wang et al., 2008). Finally, and for IM to operate, self-determination or freedom from control is necessary because IM is based on the need for self-determination (Deci & Ryan, 1985).

Self-determination theory. According to Ryan and Deci (2000), "SDT [self-determination theory] is an approach to human motivation and personality" (p. 68) that focuses on individuals' inherent and innate psychological needs—*autonomy, competence,* and *relatedness*, "that are the basis for their self-motivation and personality integration" (p. 68). *Autonomy* "concerns the experience of integration and freedom" (Deci & Ryan, 2000, p. 231); it relates to the ownership of one's behaviour and to the ability to choose according to one's self-endorsed values; "the need for autonomy is essential for the goal-directed behaviour to be self-determined" (Deci & Ryan, 2000, p. 242). *Competence* refers to the ability to produce the desired effects and successful outcomes (Deci et al., 1991). Besides, the need for *competence* keeps people engaged in ongoing cycles of searching and conquering optimal challenges (Deci & Ryan, 1985). Finally, *relatedness* involves developing relationships and the need of being connected with others and with one's social environment (Deci et al., 1991).

According to Deci et al. (1991), the concept of inherent psychological needs is important because it addresses the presence of motivational universals in people, which gives content to their lives. Second, it "allows one to specify the contextual conditions that will facilitate

motivation, performance, and development" (p. 327). Finally, and according to SDT, the satisfaction of the inherent psychological needs is essential for healthy development and well-being (Deci & Ryan, 2000). Thus, if these psychological needs are not satisfied, then negative emotions, such as fear, might arise. If fear is prolonged, it can provoke negative emotional states such as anxiety.

The following section will address the Dualistic Model of Passion for understanding how some students who experience passion for learning engage in the activity they love harmoniously and how others do it obsessively to explore later the connection between this and the literature on motivation.

2.2.4 Dualistic Model of Passion

Several factors can make individuals' lives worth living. Passion is one factor because it relates to outcomes considered relevant to physical health, relationships, emotions, psychological well-being, and performance (Vallerand & Verner-Filion, 2013). Nevertheless, passion might negatively affect the same outcomes (Vallerand, 2010). Vallerand et al. (2003) developed the Dualistic Model of Passion (DMP) that involves assessing passion as a motivational construct. They defined passion as "a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy" (Vallerand et al., 2003, p. 757). The DMP describes the development of passion as an ongoing process that can change depending on how individuals feel about the activity, either controlled or autonomously engaged (Vallerand, 2010). Thus, Vallerand et al. (2003) distinguished two positions that represent the duality of passion. One is the harmonious passion (HP) that leads to adaptive outcomes, and the other is obsessive passion (OP), which is hypothesized to predict less adaptive outcomes (Schellenberg et al., 2018).

Both kinds of passion refer to how individuals engage in an activity, which becomes part of their identification (Fuster et al., 2014). In the case of HP, people autonomously choose to engage in the activity that they love, and it becomes fully integrated into their identities without interfering with other life domains (Schellenberg et al., 2016, 2018). In contrast, OP generates uncontrollable internal pressure. Such pressure originates from internal contingencies, such as the need to be socially accepted or because the passion for the activity engagement becomes uncontrollable (Vallerand et al., 2003). Even though obsessive, passionate individuals might enjoy the activity—they feel the tension to engage in it. Consequently, there is an over-identification with the task that overcomes individuals' sense of identity (Chamarro et al., 2015).

The two types of passion can be interpreted as two separate constructs (Wang et al., 2008). Similarly, and linked to the DMP, the literature on motivation involves two types of internalization processes, namely, autonomous and controlled (Vallerand, 2012b). Autonomous motivation relates to actions that emanate from the self, and individuals can experience choice, the experience of the internal perceived locus of causality (Ryan & Connell, 1989). In contrast, controlled motivation emanates from the self-imposed pressure to be in control or external control, and individuals experience an external perceived locus of causality (Deci & Ryan, 2000; Ryan & Connell, 1989). For instance, when people internally and freely accept to engage in an activity without feeling attached to it, they feel attracted to it because of the intrinsic tendencies of the self (Deci & Ryan, 2000). In other words, individuals choose to participate in the activity that they highly value due to the intrinsic pleasure that it derives (Duckworth et al., 2016). Then, intrinsically motivated students engage with the activity because of the pleasure originated from learning something new. In contrast, extrinsically motivated students focus more on the external reward than on the joy of learning (Vallerand, 2012a). This suggests that intrinsically motivated

students enjoy higher HP levels, and those being less intrinsically motivated for the activity can experience higher levels of OP.

Finally, HP individuals tend to feel self-efficient and competent; however, OP individuals feel less capable (Forest et al., 2012). As for intrinsically motivated students, they experience self-efficacy because it leads to desired outcomes (Deci & Ryan, 2000). In this context, the DMP might play an essential role in understanding the influence of HP, OP, and IM as the psychological constructs involved in students' academic-self efficacy (Vallerand, 2012a).

2.3. Variables of the Study

The theoretical background of the constructs under investigation focuses on the effects of variables that undermine or facilitate students' academic self-efficacy. They also become the framework for analysing variables that increase or decrease first-year university students' negative emotional states (i.e., stress, anxiety, and depression) over an academic semester. In other words, some of the following variables become the threats or the opportunities that influence students' academic self-efficacy and others become an antidote to negative emotional states (Rowe et al., 2015).

2.3.1 Academic Self-efficacy

According to Bandura (1977), self-efficacy relates to people's willingness to feel competent when they engage in a task to reach their desired outcomes. Students' perceptions of their capacity to succeed are significantly correlated to their academic achievement outcomes (Froiland & Oros, 2014). Then, self-efficacy is representative of academic achievement. As I mentioned in Chapter 1, I have seen first-year university students losing their self-confidence and self-efficacy beliefs, especially when they fail. They lose persistence and abandon classes. However, if they perceive themselves as being competent, they quickly recover their efficacy levels compared to those with low self-efficacy (Bandura, 2010). I wanted to learn about

students' levels of self-efficacy and what influenced their capability beliefs. In addition, self-efficacy is a personal and a cognitive resource (Oriol et al., 2017; Salanova et al., 2011) that relates to people's judgment of their abilities to perform a task successfully based on their skills and circumstances they face (Bandura, 1977, 2010). Self-efficacy is "situated and contextualized"; for instance, a student can experience high levels of self-efficacy for mathematics and low levels of self-efficacy for geography (Linnenbrink & Pintrich, 2002, p. 315).

Perceived self-efficacy is defined as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives"; and these beliefs involve cognitive processes (Bandura, 1994, p. 2). Academic self-efficacy is defined as students' beliefs that they can achieve positive academic results (Gresham et al., 1988). Besides, it relates to students' self-perceived confidence successfully to perform a task (Ferla et al., 2009). The stronger the perceived self-efficacy, the greater the effort to persist in the task (Bandura 2010). Self-perceived confidence also influences students' choice of behavioural settings. For example, students choose to engage in activities or situations that they judge themselves as being capable of managing, and they avoid those they know they will not cope with safely (Bandura, 1977). Thus, how much students believe in their capacity will determine how persistent and resilient they can become when exposed to adverse situations (Whannell et al., 2012). Finally, self-efficacious students are willing to engage in demanding tasks, have higher expectations and goals, and persist longer than do those low in self-efficacy levels (Schwarzer et al., 2005).

Sources of self-efficacy. Bandura (1994, 1997, 2010) claimed that self-efficacy beliefs rely on cognitive processing of efficacy information and argued that individuals develop their efficacy from four main sources. The first influential way to enhance self-efficacy is through

mastery experiences, which involves acquiring the cognitive tools and choosing the appropriate course of action to overcome challenges knowing they have what they need to succeed. Second, focusing on people similar to oneself who have succeeded become social models and impact one's self-efficacy. The author called this source of influence *vicarious experiences*. The third way to modify self-efficacy is through *social persuasion*, strengthening individuals' beliefs that they can succeed, and promoting personal efficacy. Finally, the author highlighted people's *physiological and emotional states* as the last influential way of modifying and strengthening their self-efficacy beliefs by reducing their negative emotional states' reactions (Bandura, 1994). Thus, individuals "rely partly on their *physiological and emotional states* in judging their capabilities" (Bandura, 2010, p. 4). Based on this, the current study also included analysing the effect of students' negative emotional states, such as stress, anxiety, and depression, on their self-efficacy levels. Additionally, what matters is how individuals perceive, interpret, and react towards stressful experiences (Bandura, 2010), and when their levels of stress, anxiety, and depression increase, this will influence how they perceive threatening experiences (Stupnisky et al., 2013), thereby affecting their perceptions of academic control (Könings et al., 2008). Thus, students need to believe that they can control the outcome of situations (Skinner, 1996). Then, these results reveal that negative emotional states also influence individuals' levels of their perceived academic control.

In the same line, emotions also influence individuals' judgments of their efficacy, and, more specifically, positive emotions enhance self-efficacy (Bandura, 2010), then these are a predictor of self-efficacy. According to Fredrickson (2004), positive emotions generate more positive emotions; this creates an upward spiral phenomenon that leads to gratitude and appreciation. As I mentioned earlier, when individuals experience positive emotions as stable, their personal and cognitive resources increase, promoting more personal resources, such as self-

efficacy (Fredrickson, 1998, 2000a, 2001, 2004). As noted, several studies have connected positive emotions and self-efficacy, but there are not enough studies that specifically link gratitude to self-efficacy in college students. Therefore, and based on Fredrickson's theory, it is possible to hypothesize that Gratitude is a variable that predicts students' academic self-efficacy. To focus on the beauty in present situations helps divert the attention from past negative experiences or anxiety about the future and to appreciate the positive in the present time (Fagley, 2018). Likewise, psychological research has demonstrated that individuals who focus more on the good events of their lives maximize positive emotions than do those who only focus on what is missing (Kausar, 2018). Thus, based on Fredrickson's theory and Kahneman's theory explained earlier, I will consider Gratitude a mediator between negative emotional states and self-efficacy.

Bandura (1977) argued that "the more dependable the experiential sources, the greater are the changes in perceived self-efficacy" (p. 191). Bandura (1994) concluded that the four sources that influence the development of self-efficacy beliefs explained earlier are "*cognitive, motivational, affective, and selection processes*" (p. 2), and these "gain its significance through cognitive processing" (Bandura, 2010, p. 5). The effect of efficacy beliefs on *cognitive processes* relates to how individuals shape anticipatory scenarios and search for ways to control those that could threaten them. For example, people with self-efficacy beliefs will expect and envision positive and successful scenarios, think of alternative situations, and judge their actions. All of this requires analytic thinking and an "effective cognitive processing of information" (Bandura, 2010, p. 6). According to Bandura (2010), the effect of self-efficacy beliefs on *cognitive and motivational processes* refers to people's beliefs about what they can do. For example, people anticipate outcomes of actions and set goals. The effect of efficacy beliefs on *affective processes* relate to individuals' beliefs in their efficacy, coping capabilities, and perceived control to

influence negative emotional states when facing threats (Bandura, 1994). Finally, the effect of self-efficacy on *selection processes* relates to how individuals' beliefs on their efficacy affect the choices they make (Bandura, 1991). For example, if people do not believe that they can deal with a specific situation, they will not choose to engage in it; however, people will decide to undertake the challenging task if they trust their abilities. To conclude, when people manage their motivation, this increases perceived self-efficacy levels (Bandura, 1994). Based on this, it is crucial to understand the relationship between IM and Self-efficacy.

The relationship between intrinsic motivation and self-efficacy—a different insight. As I mentioned earlier, the time students persevere in the face of threatening situations, the level of stress and anxiety they experience when they face high environmental demands, and how vulnerable they can become to experiencing depression depends on their self-efficacy beliefs (Bandura, 1991, 1997). One of the four sources that influence self-efficacy development are motivational processes, and Bandura (2010) stated that self-beliefs of efficacy play a key role in the self-regulation of motivation. Concerning this, Deci and Ryan (2000) claimed that *competence*, one of the inherent physiological needs shown in the SDT, is a primary element in intrinsic motivation. Bandura (1994) claimed that motivational processes are partly governed by self-efficacy beliefs.

As mentioned earlier, several conceptual models focus on self-efficacy as influencing interests and motivation; however, the extent to which this occurs might depend on students' intrinsic motivation, a different insight that I intended to predict in Hypothesis 1 to analyse these variables from a different angle. Concerning this, I found an interesting parallel to my prediction drawn by Buch et al. (2015), who integrated the SDT and the literature on self-efficacy and presented how intrinsic motivation influenced self-efficacy and performance on cadets from military academies. One of their conclusions indicated that individuals experiencing high levels

of intrinsic motivation increased their perceptions of efficacy because of the pleasure of engaging in educational activities. Also, Guay et al. (2020) concluded that undergraduate students' intrinsic motivation at T1 positively predicted self-efficacy at T2. Ratelle et al. (2007) supported that high school students who presented high levels of autonomous and intrinsic motivation predicted more remarkable persistence and self-efficacy.

Similarly, in a quantitative research study conducted on 322 prospective teachers, Yüner (2020) found out that their intrinsic motivation predicted their self-efficacy beliefs. Consequently, these individuals presented strong beliefs that they could succeed. Wu et al. (2020) collected data from 1,930 university students to understand the relationships between their motivation and self-efficacy. They concluded that students' levels of intrinsic motivation were significantly and positively associated with self-efficacy levels. Likewise, David et al. (2007) reported that the higher the levels of intrinsic motivation on Chinese language acquisition, the higher the levels of self-efficacy. Motivation is a direct determinant of performance (Borman et al., 1991), which is why intrinsically motivated students seek to learn for the internal feeling of satisfaction (Deci et al., 1991), a feeling of efficacy (White, 1959). Because self-efficacy leads to desired outcomes (Deci & Ryan, 2000), I predicted that intrinsically motivated students will experience self-efficacy.

In addition, Schmitt et al. (2003) presented a model on two factors that influence performance: *can-do factor* (ability) and *will-do factor* (motivational in nature). They stated that these factors interact to affect performance, which means that people have to be both capable and motivated to perform well. Finally, the authors presented significant evidence of the relevance of both factors influencing performance. Consequently, this would justify the possibility of a reciprocal relationship; that is to say, it could be possible that, on the one hand, self-efficacy fosters intrinsic motivation, and, on the other hand, intrinsic motivation could influence self-

efficacy. White (1959) analysed the nature of the motivational aspect of competence, which he called *effectance*, and he indicated that "it must be conceived to involve satisfaction—a feeling of efficacy" (p. 329). Deci and Ryan (2000) argued that people feel inherently motivated to engage in activities that they find interesting, which connects to what White (1959) highlighted concerning to people engaging in the task to experience efficacy or competence. Deci and Ryan (2000) also stated that intrinsic motivation and aspirations are associated with high-quality performance. Besides, as mentioned earlier, self-efficacy and performance are connected because self-efficacy relates to people's beliefs about their ability to perform a task (Bandura, 1994). In addition, when individuals face challenging experiences, these will not involve intrinsic motivation unless the individuals experience autonomy in carrying them out (Deci & Ryan, 2000). Thus, those intrinsically motivated are self-driven, autonomous, and capable of becoming self-efficacious and with greater perceptions of competence (Buch et al., 2015).

Reflecting on the results from the previous studies mentioned earlier, it is possible to predict that intrinsic motivation influences self-efficacy, precisely one of the relations that I intend to prove in the current research.

2.3.2 Stress, anxiety, and depression

Several researchers have claimed that psychological disturbances, such as stress, anxiety, and depression, are classified as negative emotional states (Cowie et al., 2001; Colombetti & Zavala, 2019; Lovibond & Lovibond, 1995) that affect students' levels of academic achievements (Sharma & Pandey, 2017). For example, first-year university students experience various stressors, such as academic pressure, fatigue, changes in their daily routines, and social life (Surujlal et al., 2013). Also, they might feel lonely in a new setting, with the need to adjust to the demands and expectations of the social environment, and threatened by new points of view (Bhujade, 2017). Consequently, this threatening surrounding might increase their levels of

uncertainty, and students might experience fear. When this negative emotion is prolonged in time, it provokes negative emotional states, such as stress (Kahneman, 2011) that reduce students' coping skills and levels of academic self-efficacy (Respondek et al., 2017).

Stress is a psychological state that causes difficulties in concentration (American Psychological Association, 2019). Psychological stress refers to "a particular relationship between the individual and his surroundings, which is judged by him to be "threatening or to overwhelm his resources and which puts his well-being at risk" (Lazarus & Folkman, 1986, p. 63). In this context, stress is experienced as harmful because of the inability to cope with the experience and the failure to manage situational demands (Martin & Daniels, 2014). Depression combines loss of interest, feelings of guilt, low self-esteem, insomnia or excessive sleeping, and low mood, and it might cause the inability to concentrate. Anxiety relates to recurrent worrying thoughts about future events in which the outcome is uncertain (American Psychological Association, 2019). Students procrastinate about completing tasks and meeting deadlines when they experience high levels of psychological distress to avoid unpleasant feelings regardless of future negative consequences (Constantin et al., 2018; Onwuegbuzie, 2004).

The level of stress, anxiety, and depression might affect students' capacity to handle academic challenges because these negative emotional states impact their cognitive functioning and learning, and their academic accomplishments (Kumari et al., 2019). However, when students create an adaptive stress response, they perceive stress as a challenging opportunity to become a better version of themselves (Harris et al., 2017). Also, Crum et al. (2013) concluded that people could experience stress as a challenge and enhance performance or as a threat and debilitating productivity. In conclusion, a certain level of stress might be recommendable for students who perceive it as a motivational factor that actively encourages them to progress in their academic journeys.

My institution belongs to the new private HEIs that mainly receive students from disadvantaged backgrounds, representing 69% of the entire education sector and whose families engage in loans to finance tuition fees. If these students wish to apply to the few most prestigious institutions, it would be challenging to reach the requirements and be accepted. It is an example of the social segregation and inequalities that persist and what might have provoked the students' movements, which mirrored the anger they were experiencing, as I described earlier. In the end, whether students manage to cope with challenging experiences or not depends on their way of appraising their relationship to environmental events (Martin & Daniels, 2014). When individuals believes that a situation exceeds their capacity to respond to it, they might experience psychological stress (Tang et al., 2018), and anxiety and depression might be triggered (Bhujade, 2017). I found negative emotional states intriguing to explore among the study sample to find answers as to how to support students' transition into college.

Even though stress might positively impact students' capacity to learn when individuals feel threatened, their psychological emotional states become unstable (Bhujade, 2017) and their cognitive resources are affected, thereby influencing academic control (Pekrun et al., 2017). Hence, negative emotional states have the opposite effect and function of positive emotions (Pekrun et al., 2011); they narrow cognition. People only focus on the imposing threat, and their ability to build personal resources also decreases (Fredrickson, 1998). These results reveal that negative emotional states negatively influence students' perceptions of their academic control and self-efficacy beliefs.

When students do not believe that they can positively influence adverse outcomes, then they might experience anxiety. However, when they perceive a greater control of their performance, and they perceive themselves as being capable of intentionally influencing outcomes, this leads them to greater enjoyment (Stupnisky et al., 2013). Developing coping

capabilities in managing negative emotional states increases perceived self-regulatory efficacy (Bandura, 1994). Several researchers have emphasized the relevance of emotional granularity and factor differentiation (FD), which are synonyms that refer to the capacity of individuals to identify the differences between similar emotional states and they are positively related to adaptive emotion regulation (ER) as developing coping capabilities (Smidt & Sudak, 2015). ER is "the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (Gross, 1998b, p. 275). Understanding that emotions emerge from these experiences is crucial to treat negative emotional states (Garber et al., 2016). Thus, reaching emotional awareness and emotion differentiation is vital (Pond et al., 2012) and "allows for greater regulatory control over emotional states" (Pond et al., 2012, p. 326). Then FD becomes a significant variable to consider as a factor that influences positively stress, anxiety, and depression. Concretely, I will expand on this variable later in this chapter.

2.3.3 Obsessive passion

Obsessive passion (OP) is a motivational process related to a strong desire that involves a loss of reason and control. Individuals are slaves to their passion because passion controls them (Vallerand et al., 2003). Consequently, there is a controlled internalization of the activity into people's identity, originated from interpersonal pressure (Vallerand & Verner-Filion, 2013). Thus, the passion for the task controls them, evidenced by their rigid and compulsive engagement with the activity (Vallerand, 2012b). Individuals engage in the task because they need to feel socially accepted, for instance, rather than their love towards the activity itself (Curran et al., 2011). In other words, OP positively arouses negative affect, such as the urge and tension to engage in the activity (Vallerand, 2012a).

Moreover, OP emerges from a partial integration of the activity that one loves because there is a lack of integration between the task and its outcomes into the individual's identity. As a result, the activity conflicts with pre-existing values and goals (Curran et al., 2011). Those who are obsessively passionate about an event that they consider essential and enjoyable feel an external force that possesses them, which might conflict with other aspects of their lives (Wang et al., 2008). Thus, OP leads to self-destructive behaviour (Wang et al., 2008). Consequently, individuals tend to abandon any other important activity or life interest due to their obsessed engagement with the task, even in the face of personal costs or in the presence of high risk (Vallerand, 2003, 2012b). For example, a working-class student who struggles to have the chance to go to university and manages to do so also might struggle to reach graduation (Boliver, 2017), and this can affect individuals' beliefs that they can succeed, which can affect personal efficacy (Bandura, 2010). Then, and after graduation, the working-class graduate might have fewer chances to apply and to work for a prestigious organization than those who come from an advantaged socio-cultural and economic background (Britten et al., 2016). According to Boliver (2017), working-class graduates might have a social and emotional cost to fit in and reach social mobility. Then, just a few succeed, and the remainder either persist or lose their expectations. The author concludes that working-class students will continue to struggle until universities invest in them and provide them with the financial, psychological, and emotional support they need. To conclude, it can be inferred that OP interferes with the achievement of a balanced and successful life (Vallerand & Verner-Filion, 2013). Based on these findings, it can be predicted that students with high OP levels will feel less self-efficient, a relation that I found enlightening to explore. Schellenberg et al. (2016) reported that OP students perceive college as a pressuring environment and they avoid treating themselves with compassion when they do not academically succeed, a tendency of maladaptive outcomes in times of adversity. Moreover, OP students feel an urge to

complete homework and to study overnight (Schellenberg & Bailis, 2015) because they are "fearful of failure in achievement settings" (Schellenberg et al., 2016, p. 279). Thus, they experience states of post-activity tension and low levels of enjoyment (Fuster et al., 2014). Other researchers have claimed that intrinsic motivation (IM) conceptually relates to passion because they involve interest in an activity (Vallerand, 2010). However, IM only relates to harmonious passion (HP) because it leads to adaptive outcomes and not to maladaptive outcomes, as OP does (Deci & Ryan, 2000). For example, intrinsically motivated students enjoy learning, and they autonomously choose to engage in the activity.

In line with the SDT developed by Deci and Ryan, the internalisation of passion depends on environmental and personal factors influencing either a full or partial integration of behaviour. As previously mentioned, OP relates only to partial integration, which results from environmental control. Even though OP individuals love the activity, they only engage with it to reach an objective other than the activity itself (Curran et al., 2011). OP students are more likely to predict adverse academic outcomes and problematic health behaviours than are HP students (Bureau et al., 2017). Students who are obsessively passionate about a specific activity experience negative emotional consequences from their controlled and persistent engagement and high levels of non-self-determined forms of motivation (Curran et al., 2011). In other words, when the objective or motive for students to engage in an activity is fuelled by compulsion, social pressure, or addiction, for instance, this results from controlled internalisation (Kent et al., 2018). Given these findings, it is expected that IM will negatively relate to OP and OP to academic self-efficacy.

2.3.4 Harmonious passion

Harmonious Passion (HP) is a motivational process related to "a strong inclination toward an activity that people like" (Vallerand et al., 2003, p. 757), which positively predicts positive emotions during and after engagement in an activity (Vallerand, 2012a). Individuals who

experience HP actively participate in the task, and freely decide when or when not to engage (Vallerand et al., 2003). Also, they control the activity, which is in harmony with other aspects of their lives (Wang et al., 2008). Thus, the task occupies a significant part of their lives without invading space in their identities (Vallerand, 2012b) because they believe that the activity is in line with their values. Thus, harmoniously passionate individuals partake in the task with an open-minded attitude, which enhances positive experiences (Deci & Ryan, 2000) and leads to adaptive outcomes (Vallerand, 2010).

HP minimises the exposure of adverse effect because it allows people to internalise the task into their identities in an independent manner (Vallerand, 2015). Autonomous internalisation occurs when people freely participate in an activity that they love. When they do so, they experience joy, excitement, and high levels of performance or efficacy (Vallerand, 2012b), which is why it can be inferred that HP positively influences individuals' life in a significant way (Vallerand et al., 2013). For example, students might feel excitement about an activity, and this, in turn, might influence their academic performance and outcomes (Vallerand, 2010). Also, some researchers have reported that people who feel harmoniously passionate about an activity enjoy high physical and psychological well-being (Schellenberg et al., 2018). Others have shown that autonomously motivated students enjoy their college experiences and attain higher marks than do those regulated by external contingencies (Black & Deci, 2000). Consequently, HP and intrinsic motivation are related due to the positive emotions associated with the activity (Vallerand, 2015). Individuals need to develop and to sustain passion and motivation for an enduring sense of efficacy (Rampa, 2014). These results reveal that IM and HP become significant variables to consider that predict self-efficacy.

HP has positive benefits in the educational context because it influences performance and promotes higher concentration levels (Ruiz-Alfonso & León, 2017). When students can identify

their passion, they can make their academic experiences in college more meaningful (Bureau et al., 2017). For instance, they experience higher levels of HP for their studies, higher levels of life satisfaction, and well-being, consequently, they feel competent (Forest et al., 2012). To summarise, passion involves a unique connection with the task because it is closely linked to identity (Vallerand, 2010). When people become passionate about an activity, they not only love and autonomously engage regularly with the task, but also the task defines them. It becomes who they are (Vallerand, 2012b) because they highly value what they do (Aron et al., 1992).

2.3.5 Gratitude

Affective scientists have focused on the social function of emotions, which relates to the connection of individuals in social relationships by stimulating cooperation and reciprocity (Van Cappellen, 2017). Several researchers have identified a subset of positive emotions with a self-transcendent quality, and gratitude is one of them (Van Cappellen, 2017; Yaden et al., 2017). It fosters people to transcend their needs to focus on other people's needs (Niedenthal & Brauer, 2012) because of their willingness to help (Stellar et al., 2017). In other words, gratitude is rooted in the aspiration to care for other's well-being (McCullough et al., 2001). When people know that they have benefited from the benevolence of others, they respond with greater motivation, and gratitude becomes the motivation to engage in cooperative actions, which suggests that feeling grateful is intrinsically pleasant and becomes a predictor of intrinsic motivation and joy (McCullough et al., 2001; Hicks et al., 2018). Thus, and because gratitude is positively associated with IM, this might influence students' levels of engagement with the activity (Bureau et al., 2017), which might impact learning outcomes (Wang et al., 2008). Froiland (2018) claimed that students who experience positive emotions intrinsically engage in their learning and become motivated in their academic contexts (Froh et al., 2010).

How people deal with emotions determines their overall life satisfaction—for example, when they enjoy genuine and habitual gratitude, this can improve well-being by effectively stimulating mental health when they experience low well-being (Geng, 2018). Thus, when people focus on the bright side of their lives, and their thoughts and feelings are filled with appreciation and positiveness, this might increase their happiness levels (Baumsteiger et al., 2019). Gratitude is also linked to physical health; for instance, people tend to enjoy better cardiovascular health, lower levels of stress, anxiety and depression, and higher sleep quality when they regularly experience genuine gratitude (Hill et al., 2013). However, when people ruminate on negative experiences or worry about the future, they become anxious and stressed. Hence, it is difficult for them to focus on the positivity happening in their present time (Fagley, 2018). Given this, it is possible to predict that those experiencing anxiety and stress will find fewer reasons to become grateful.

Gratitude increases prosocial attitudes by fostering helpers to reach self-efficacy, a personal resource that allows individuals to achieve a successful outcome effectively (Bandura, 1977). Gratitude expressions enable helpers to feel appreciated because their actions positively influence others, and so when they are thanked for their efforts, they experience social worth (Grant & Gino, 2010). The feeling of being valued by others fosters motives to interact and to help in meaningful ways (Froh et al., 2010). In other words, gratitude promotes the desire to enhance the welfare of others through reciprocal acts of generosity (Stellar et al., 2017). Finally, emotions influence individual's judgment of their efficacy (Bandura, 2010). Thus, and based on Fredrickson's theory, the current study also will consider gratitude as a variable that predicts self-efficacy, an essential human motivation and desire to feel competent (Bandura, 1977)

Gratitude motivates individuals to self-improve (Stellar et al., 2017), which is intrinsically rewarding and perceived as a decisive and influential factor in academic performance

(Augustyniak et al., 2016). It could be inferred that those who are grateful and motivated are ready to learn because they believe that they have the personal and learning resources they need. Gratitude relates to the predisposition and the tendency of people to notice and to appreciate the positive aspects of life and to perceive negative experiences as an opportunity to build character, success, and well-being in human development (Chaves et al., 2016). It helps individuals to find positive meaning in adverse circumstances (Froh et al., 2010; Wood et al., 2010), to be less critical, and to experience a more compassionate relationship with the self, especially when things do not go well (Petrocchi & Couyoumdjian, 2016). Consequently, gratitude plays an essential role in mental health and well-being (Fagley, 2018). Then, well-being arises from how people interpret the events of their lives (Wood et al., 2010). For example, those who believe that their success only depends on the actions of others experience low levels of well-being, which could be related to negative affect such as depression and anxiety (Sanjuan et al., 2008). Also, individuals who perceive an event as threatening and exceeding their coping skills will experience high levels of negative emotional states such as stress, anxiety, and depression (Wood et al., 2010). Therefore, life satisfaction might be impacted by how people deal with emotional information.

Given these findings, gratitude might lead to students' IM, but this effect might be different when there are more, or fewer levels of negative emotional states involved.

2.3.6 Perceived academic control

Perceived Academic Control (PAC) applies specifically to educational settings, and it relates to individuals' perceptions and beliefs that they can influence outcomes in their environments (Stupnisky et al., 2013) and to their beliefs in their influence over success or failure, and it has a high influence on academic achievement (Respondek et al., 2017). PAC is used to describe the "psychological state of being in and out of control" in specific learning

settings (Perry et al., 2005, p. 536). Moreover, PAC plays an essential role in students' achievement striving, academic performance, and outcomes (Stupnisky et al., 2013). Negative emotional states, such as anxiety, stress, and depression, might have a more significant impact on people's lives than do positive ones because the adaptation process of an adverse event takes more time than do the adaptation-level effects of a happy experience (Baumeister et al., 2001). Moreover, negative emotional states undermine cognitive resources (Pekrun et al., 2017). However, if individuals manage to reduce negative emotional states' reactions, they could find ways of modifying and strengthening self-efficacy beliefs (Bandura, 1994). These effects might be mediated by students' positive perceptions of their academic control (Pekrun et al., 2010). When people control unpleasant situations, they perform better than when they do not believe they can (Deci & Ryan, 1985). In other words, when students experience positive perceptions of their academic control, they can alter events (Skinner, 1996). Given these findings, it might be hypothesized that PAC mediates the relation between negative emotional states and academic self-efficacy.

First-year university students face high standards of academic demands and challenging tasks, making them feel out of control (Stupnisky et al., 2013). Perceived control (PC) in academic settings is understood as a stable psychological disposition that might affect students' academic self-efficacy (ASE) (Fishman, 2014). PC and ASE are closely related; however, there is a distinction to highlight. According to Skinner (1996), self-efficacy refers to "the extent to which a potential means is available to a particular agent," an agent–means relations (p. 553). Perceived control refers to "the extent to which an agent can intentionally produce desired outcomes and prevent undesired ones," an agent–ends relation (p. 554). Rodin (1990) added that perceived control relates to "a sense of personal competence in a given situation" (p. 4). Based on this, Skinner (1996) argued that the need for competence is closely related to control, and it

"provides the feelings of efficacy that result from experiences of control" (p. 557). Given this, and based on the Self-determination Theory, it is expected that "experiences of control, as captured in ratings of feelings of efficacy" (Skinner, 1996, p. 560), influence efficacy.

Perceptions of control of academic outcomes can generate positive emotions, such as joy and pride (Pekrun et al., 2004). When experiences of control meet students' innate need for competence, they try hard and persist even when they fail (Skinner, 1996, p. 560). Nonetheless, when individuals believe that they are not in control or cannot influence adverse outcomes, they might feel stressed and anxious—that is, PAC negatively predicts stress and anxiety (Pekrun, 2004; Ruthig et al., 2009; Stupnisky et al., 2013). Besides, if students perceive control as impossible, they become passive and depressed (Skinner, 1996). Thus, when students' levels of PAC decrease, this might increase students' levels of negative emotional states (Perry et al., 2001; Respondek et al., 2017). Accordingly, if they do not adapt to new academic demands, their levels of negative emotional states might increase, which might lead to lower levels of PAC (Respondek et al., 2017). Given these findings, it can be predicted that there is a reciprocal and negative relation between PAC and negative emotional states. For instance, on the one hand, when students feel academically in control, their levels of anxiety and stress decrease. On the other hand, when students' levels of negative emotional states increase, they will feel less in control of their academics. These results support my intention of analysing the relation between PAC and negative emotional states and vice versa.

2.3.7 Factor differentiation

I have taught first-year university students for 17 years, and I have witnessed how they struggle because they feel stressed during their adaptation to college. In my journey looking for ways to support them, I learned about the relevance of becoming aware of emotions to differentiate emotional experiences and to regulate emotions. I found this to be a fascinating topic

to explore as one of the possible tools students can develop to know how to mitigate or to decrease negative emotional states (Barret et al., 2001). Factor differentiation, emotional granularity, emotional creativity, emotional awareness, emotional intelligence, and emotion regulation are related constructs (Lee et al., 2017). Factor differentiation (FD) of emotional experiences is a cognitive ability that allows individuals "to make subtle distinctions within emotion categories" and to "distinguish differences among similar emotions" (Kang & Shaver, 2004, p. 689).

Emotional granularity (EG) is the ability to differentiate emotions in a highly specific manner and to label emotions by giving meaning to their affective states, such as fear in a threatening context or joy during a pleasant experience (Lee et al., 2017). EG also is known as emotional differentiation, and it relates to individuals' emotional awareness and their ability to identify and to classify situations or experiences into discrete emotional categories (Pond et al., 2012). To label emotions, it is crucial to reach emotion understanding, which comes before emotion regulation. Emotion regulation requires the ability to perceive and to identify feelings, to understand the causes and consequences of emotions and their intensity, and to recognize that many emotions can co-occur (Garber et al., 2016).

Students need to develop the ability to give differentiated descriptions of their feelings (e.g., anger vs. fear). Those who have developed a greater capacity to distinguish among different emotions can generate more emotion categories (Kang & Shaver, 2004). When individuals cannot differentiate among these emotions, they experience low granularity or emotional differentiation (Smidt & Sudak, 2015). They ruminate about negative experiences and feelings and have less capacity for emotion regulation (Pond et al., 2012). Conversely, if individuals understand their emotions, they experience high levels of emotion differentiation, and they have more chances to regulate their emotions than do those with less emotion differentiation levels

(Barrett et al., 2001; Barrett & Schulkin, 2017; Gross, 1998b). Thus, the more that individuals become aware of their emotions, the better they will calibrate their emotional reactions to emotional experiences (Demiralp et al., 2012). In other words, if individuals can differentiate emotions, they can change their emotional state and decrease their stress and anxiety levels (Cowie et al., 2001). Based on these findings, factor differentiation can become a significant variable to consider that impacts negative emotional states

Perceptions of control over aversive events and possible outcomes are relevant (Pekrun et al., 2011). Researchers have revealed that perceived control is positively related to good strategies and adaptive emotions (Stupnisky et al., 2012). In addition, low levels of control lead to negative emotional states (Pekrun et al., 2017), and emotion regulation can influence adaptive functioning (Tamir, 2011). Based on these findings, it is pertinent to focus on how students' factor differentiation influences their perception of control over academics and, in turn, their levels of stress, anxiety, and depression.

According to Gross (2015), emotions can be harmful when they represent the incorrect intensity, the incorrect type for a particular situation, or the incorrect duration, such as shortening or prolonging a feeling. For example, and as stated earlier, when negative emotions are prolonged in time, they generate negative emotional states (Cowie et al., 2001), harming oneself and/or others. Conversely, some people might change the quality of a feeling or an emotional state when they manage to see the positive side of a threatening situation. They can do this by treating it as a learning opportunity. To reach this positive end, individuals use emotional differentiation and emotional regulation strategies to benefit psychological and physical health (Gross, 1998a) by decreasing negative emotions and emotional states (Gross, 1998b).

The ability to reach emotion understanding and to distinguish differences among emotions increases in contexts wherein intense negative emotional states happen because there is a greater

need for emotion regulation than in a context wherein positive emotions are present (Barrett et al., 2001). According to Kang and Shaver (2004), "emotion differentiation and emotion regulation were positively related only when intense negative emotions were experienced" (p. 720). Therefore, there is a more significant influence of emotional differentiation and regulation when there are high levels of negative emotions, such as fear (Barrett et al., 2001) or high levels of negative emotional states, such as anxiety.

Autonomously motivated individuals value what they do (Weinstein & Ryan, 2010). They choose to participate in the activity because of the intrinsic pleasure it derives (Duckworth et al., 2016). Those interested in differentiating and monitoring their feelings develop intrinsic emotion regulation (Gross, 2015). Besides, when they experience academic satisfaction and feel intrinsically motivated, their perceptions of academic control increase (Oriol et al., 2016). According to Wilson and Gilbert (2005), it is difficult to predict how one will feel in different situations because people tend to overestimate the intensity and duration of positive or negative emotions. For example, it happens that people regularly mispredict how much happiness or unhappiness future situations will bring. The authors added that this uncertainty might bring events that do not maximise happiness, mostly if what unfolds is different from what individuals had imagined. Thus, intrinsic emotion regulation has been a particular focus in the literature on emotion regulation (Gross, 2014). In addition, perceived control also is crucial for adaptive emotions (Stupnisky et al., 2012). Actions that change situations to influence an unfolding emotional response are critical features of adaptation and are known as primary control (Gross, 2015, p. 8), defined as the perceived capacity to influence one's environment (Perry et al., 2005). The impact of these strategic attempts to modify a situation has not been analysed enough (Gross, 2015). Based on the findings, it is possible to predict students' intrinsic motivational interest

related to their learning process as a significant variable influencing and moderating the relation between emotion differentiation or emotion regulation and PAC.

2.3.8 Intrinsic motivation

Intrinsic motivation (IM) is an internal state or condition that results in goal-directed behaviours (Schunk et al., 2014). People engage in doing something for the inherent satisfaction of just doing it (Hammerschall, 2019), and it leads to desired outcomes (Deci & Ryan, 2000). Besides, it is relevant to consider the innate psychological needs to understand human motivation (Dyrberg & Holmegaard, 2019). For example, if teachers are *autonomy*-supportive and consider students' basic psychological needs, then students' IM, confidence, perceived competence, or self-efficacy for the activity might naturally increase (Ryan & Deci, 2000). Those who are autonomously motivated experience a spontaneous pleasure for the activity and they feel efficacious, more than do students who are more controlled in their motivation (Black & Deci, 2000; Deci & Ryan, 2000).

Several first-year university students experience a transition from school into college as overwhelming and intimidating (Deen & Leonard, 2015). The reason is that their expectations before enrolment might differ from their experience at the university (Black & Deci, 2000). Also, the new social environment might intimidate students; therefore, their innate needs for *relatedness* might be challenged. If students' desire to feel connected with others is not satisfied (Wang et al., 2008), this can influence their IM levels of academic performance (Black & Deci, 2000). Contrastively, students' levels of optimal motivational pattern, high-autonomous, and low-controlled regulation for learning facilitate active learning (Vallerand, 2012b). The innate psychological need called *competence* relates to students' judgment of their abilities to self-manage learning to achieve the desired performances (Yang et al., 2019). Therefore, students who believe that they can be *autonomous* learners will self-manage their learning and,

consequently, they will feel self-efficient and will actively participate in education (Wang et al. 2009). Then, teachers should provide choice as a motivational strategy to allow students to satisfy their need for independence, resulting in positive outcomes (Deci & Ryan, 2000).

When students perceive a task as being meaningful, they will be motivated and eager to participate actively (Kılıçoğlu, 2018). Intrinsic motives or self-determined motives can become predictors of perceived control (Staunton et al., 2015). Those who become intrinsically motivated develop high levels of perceived competence as learners (Buch et al., 2015; Williams & Deci, 1996). Likewise, other researchers have found that university students that were autonomously motivated at the beginning of the year perceived themselves as being competent at the end of term (Black & Deci, 2000). Thus, autonomous IM predicts self-efficacy (Guay et al., 2020). The more students experience IM, the more self-efficacious they feel, which, in turn, influences their performance (David et al., 2007; Hong et al., 2017). To conclude, if students experience high autonomous motivation, they will be more likely to perceive themselves as being academically capable of pursuing their goals because they will feel competent (Litalien & Guay, 2015). Based on these findings and the SDT, I hypothesized that IM becomes a significant variable to consider as a predictor of self-efficacy and perception of control.

According to Manstead (2018), in the case of the psychology of social classes, and focusing on working-class people, their material conditions, social environments, and the disadvantage of educational and work opportunities explain various phenomena. For example, they have fewer chances to meet their innate basic psychological needs, and they have to become resilient to cope with their hardship realities. The author concludes by arguing that social class and economic mobility inequalities influence lower class people and their levels of well-being. Therefore, it is crucial to offer psychosocial interventions to provide working-class university students with the support they need. In this way, students can benefit and meet their

psychological needs to progress (Froiland, 2018), which, in turn, might positively impact their self-efficacy levels (Hong et al., 2017).

Finally, emotional creativity implies complex emotional processes (Averill, 2005) because of the ability to express a combination of emotions (Averill & Thomas-Knowles, 1991) that, in turn, are crucial to provoke students' satisfaction and intrinsic interest related to their learning process (Oriol et al., 2016). Emotional intelligence is the ability to identify, to understand, and to regulate emotions (Salovey & Mayer, 1990), and these, in turn, enhance creative processes (Gross, 2015). Based on these perspectives, emotional regulation enhances emotional creativity (Oriol et al., 2016). Students who have a goal-oriented behaviour enjoy high levels of IM (Deci & Ryan, 2000), emotional creativity (Oriol et al., 2016), and they learn more because they intrinsically and voluntarily engage in their academic activities (León et al., 2015).

2.4. Research Hypotheses

The following figure shows the hypothetical conceptual model that links together all of the variables of my study described earlier in one model:

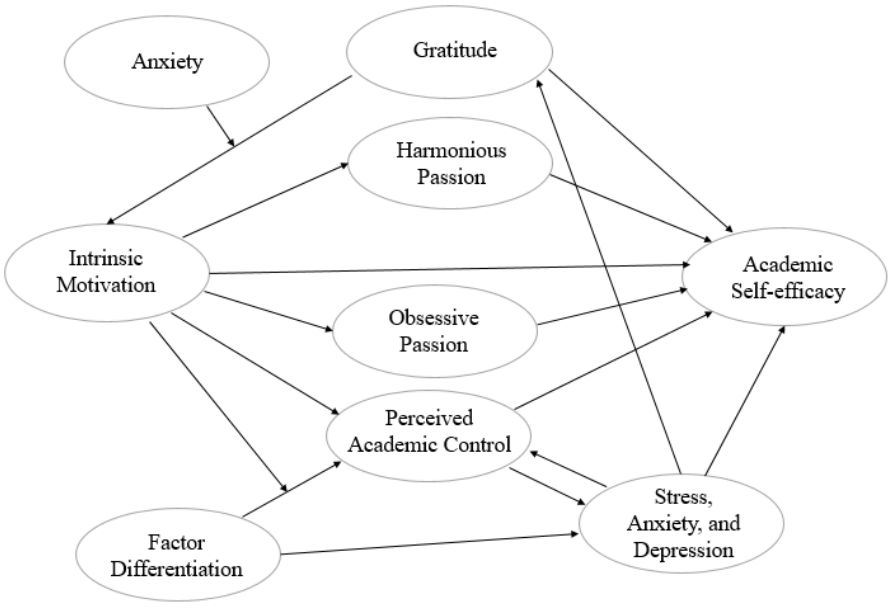


Figure 1. Hypothetical conceptual model that links together all the variables in one model

According to the relations and predictions among the variables presented in this chapter, I will explore and analyse the factors that influence positively or negatively people's beliefs in their efficacy. Also, I will focus on what increases or decreases people's levels of negative emotional states, such as stress, anxiety, and depression at two points over 6 months. Also, I will examine the possible relations among the variables of the study. For this, I isolated the variables of interest that led to the six hypotheses to be tested. Specifically, below, I present each longitudinal hypothesis based on a thorough review of the literature discussed in this chapter. In each of the hypotheses, I will test different portions of the conceptual model designed in Figure 1. These are:

H1: Students' levels of Harmonious Passion (HP) and Obsessive Passion (OP) for academics, as well as students' Perceived Academic Control (PAC) at T2, mediate the relationship between Intrinsic Motivation (IM) at T1 and academic self-efficacy (ASE) at T2. Therefore, high levels of IM at T1 are associated with higher levels of HP and PAC at T2 and, in turn, with higher levels of ASE at T2. Then, low levels of IM at T1 are associated with higher levels of OP at T2 and, in turn, with lower levels of ASE at T2.

H2: The relationship between gratitude at T1 and Academic Self-efficacy (ASE) at T2 is mediated by Intrinsic Motivation (IM) at T2; therefore, high levels of gratitude at T1 are associated with higher levels of IM at T2 and, in turn, with higher levels of ASE at T2.

H3: The indirect effect of Gratitude at T1 on students' academic self-efficacy at T2 through students' IM at T2 is moderated by anxiety at T1; therefore, it is expected that the moderated mediation effect will be statistically significant.

H4: The relationship among Stress, Anxiety, and Depression (SAD) at T1, and Academic Self-efficacy (ASE) at T2 is mediated by Perceived Academic Control (PAC) at T2. Therefore, high levels of SAD at T1 are associated with lower levels of PAC at T2 and, in turn, with lower

levels of ASE at T2. Then, the relationship between SAD at T1, and ASE at T2 is mediated by Gratitude at T2; therefore, high levels of SAD at T1 are associated with lower levels of Gratitude at T2 and, in turn, with lower levels of ASE at T2.

H5: The relationship between Factor Differentiation (FD) at T1 and Stress, Anxiety, and Depression (SAD) at T2 is mediated by Perceived Academic Control (PAC) at T2; therefore, high levels of FD at T1 are associated with higher levels of PAC at T2 and with lower levels of SAD at T2.

H6: The indirect effect of Factor Differentiation (FD) at T1 on students' Stress, Anxiety, and Depression (SAD) at T2, through students' Perceived Academic Control (PAC) at T2, is moderated by Intrinsic Motivation (IM) at T1; therefore, it was expected that the moderated mediation effect would be statistically significant.

2.5. Summary

Chapter 2 presented a description of the factors that influenced positively or negatively students' levels of academic self-efficacy and factors that increased or decreased students' negative emotional states. I also presented an understanding of relevant concepts, such as the difference between emotions and emotional states. Besides, I described the theoretical background of the thesis under investigation. First, I introduced Kahneman's Theory, which evidenced that emotions can influence cognitive processes. Then, I explained Fredrickson's Theory, which stated that positive emotions increase individuals' personal resources. Also, I presented Deci and Ryan' Self-Determination Theory, a theoretical framework used to study students' motivation (Dyrberg & Holmegaard, 2019), which I also used to contextualize perceived control. Moreover, I introduced the Dualistic Model of Passion that involves assessing passion as a motivational construct.

Based on an in-depth literature review related to my topic of interest, I addressed each of the variables under investigation, which I then presented and linked in a conceptual model. Finally, I predicted how I would test different portions of the conceptual model through six longitudinal hypotheses.

Chapter 3. Research Design and Methodology

The purpose of Chapter 3 is to focus on the methodology that addresses the study design, which, in turn, delineates the purpose of the study, explains the epistemological basis for the research, and justifies the specific perspectives on knowledge behind the methodological approach. Then, I present the variables of the study and the hypotheses, which are based on the discussion presented in the literature review. Finally, I provide details on the research sample, each of the methods I used to collect data, and the process of analysing the data collected.

3.1. Study Design

The way that I formulated my research question pointed to a study aimed at testing longitudinal hypotheses to explore the prospective relationships among the different types of variables that influence positively or negatively students' levels of academic self-efficacy and their negative emotional states. I conducted a longitudinal quantitative research study because I wanted to test hypotheses, and I wanted to use a sample size that could be generalizable to the total population. The study was based on objectivity and measurability to learn about the effects of time on various factors (Cohen et al., 2007).

I addressed the following research question: What factors influence positively or negatively students' beliefs in their academic self-efficacy, and what increases or decreases their negative emotional states, such as stress, anxiety, and depression, over a period of time while attending a private and large Higher Education Institution in Chile? I sought information concerning the current status of the phenomena to describe what exists regarding the variables of the study. I collected data from the same group of individuals over two points in time within approximately a 6-month timeframe to examine possible changes among the study variables. To address the research problem, I analysed observed variable models. I undertook a regression-based path analysis to estimate direct and indirect, and conditional and unconditional effects

using simple mediation analysis, parallel multiple mediator models, and moderated mediation analysis, which I quantified using ordinary least squares (OLS) regression, a common practice in observed variable path analysis (Hayes, 2013).

I used Hayes's PROCESS Macro for SPSS version 22 (Statistical Package for the Social Sciences) to generate the required statistics and output to estimate my study models. According to Hayes (2013), "PROCESS is a computational tool for path analysis-based moderation and mediation analysis as well as their integration in the form of a conditional process model" (p. 419). According to Hayes et al. (2017), this computational tool is available for SPSS, and it "simplifies the implementation of mediation, moderation, and conditional process analysis with observed variables" (p. 2). The authors added that any Structural Equation Modeling (SEM) program "can generate path analysis with observed variables as PROCESS does"; however, "PROCESS produces the analysis automatically" (p. 2). Besides, because I used several variables and analysed several different relations, I decided to isolate these variables and to test different portions of the conceptual model that I presented in Figure 1, Chapter 2. Also, PROCESS allowed me better to combine mediation and moderation analysis. In SEM, the model needs to fit, which means that "the estimation stops when further modification to the estimates does not improve the correspondence more than as required by the convergence criterion" (Hayes et al., 2017, p. 2). Even though I understand that this can be more robust, it also gave me less space when analysing mediations and moderated mediations, which is why I chose PROCESS. Finally, because I did not use SEM to estimate the models of my study, I did not seek to fulfil any stability hypothesis.

Epistemology–Postpositivistic and quantitative method. Phillips and Burbules (2000) claimed that postpositivism "is an orientation more than a school of thought" (p. 26). According to Ryan (2006), several researchers might see positivism and quantitative methods as one way of

conducting research, and postpositivism and qualitative methods as another way. Clark (1998) claimed that postpositivist researchers do not reject qualitative methods nor quantitative methods and that the research question(s) is what determines the research methods to be used. Phillips and Burbules (2000) argued that "human knowledge is not based on unchallengeable rock-solid foundations" (Phillips & Burbules, 2000, p. 26). Postpositivists seek objectivity by acknowledging the possible effects of biases (Robson & Colin, 2002). Thus, researchers should never be "in a position to prove the universality of findings" (Clark, 1998, p. 1244). Ryan (2006) claimed that the postpositivist stance suggests that researchers be reflexive and persist, despite the contradictions that might arise during the process of research without withdrawing from the challenges inherent in it. Also, she highlighted that even though postpositivists share their findings with some authority, they avoid dogma. According to Miller (2000), both postpositivists and positivists believe that reality exists. However, postpositivists argue that it can only be known probabilistically (Robson & Colin, 2002). Miller (2000) concluded that "knowledge remains centred on causal explanations for regularities observed in the physical and social world" (p. 60).

Due to the nature of my research question, I adopted a postpositivist stance using a longitudinal quantitative research approach. I elaborated my hypotheses as a result of considerable reflective thinking of the literature related to the research problem before collecting the data. I adopted a deductive, hypothesis-based scientific method approach, from hypotheses to implications, informally called a *top-down* approach. After I had formulated testable hypotheses, I tested those producing measurable outcomes (Bernard, 1865, as cited in Ayala, 2009; Wafula & Wang, 2019). The literature review justified my general question, which then I narrowed down into several specific hypotheses to test along the process of my investigation. With careful and systematic observations and analysis of the collected data, I addressed and tested the predictions

derived from the hypotheses later to confirm or to reject. Therefore, hypotheses played an essential role in my Thesis. I formulated them to focus on the relations among the research variables, at two points over the course of 6 months, to analyse the stated relationships (Kerlinger, 1970), which I present, discuss, and test with care whether they are supported or rejected, in the coming chapters of this study.

Longitudinal quantitative mediation and moderation analysis. The term *longitudinal* refers to studies that involve the collection and analysis of data over a period of time (Cohen et al., 2007) "during the observation of subjects on a number of variables" (Ruspini, 2002, p. 3) of at least two different waves (Cole & Maxwell, 2003). Longitudinal studies allow collecting rich data, tracing, and understanding changes over time, establishing causal relationships and effects and rigorous inferences of causality within cohorts, and studying developmental patterns (Cohen et al., 2007). Causal is a type of inference from correlational data, and it consists of a cause and an effect, which, in turn, needs to satisfy the following conditions: time precedence, relationship, and non-spuriousness (Cole & Maxwell, 2003). There are also weaknesses of longitudinal studies, such as high risk of losing participants along the way, which might impact the representativeness of the initial sample. Further, longitudinal studies are time-consuming because the researcher has to wait to collect the data to begin with the analyses (Gorard, 2001, p. 86).

According to Creswell (2012), there are different types of longitudinal studies; they can be of short or long duration. For example, a cohort study, in which "a specific population is tracked over a specific time, but selective sampling within that sample occurs" (Borg & Gall, 1979, as cited in Cohen et al., 2007, p. 212). The current Thesis study represents a cohort design, in which I tracked first-year university students at two points over 6 months but not every individual from the first wave participated again during the second wave; however, every single respondent from the second wave participated in the beginning.

There are several techniques for analysing longitudinal data, and the selection depends on the type of research (Ruspini, 2002). The literature on mediation and moderation analysis in longitudinal data has been increasing during the past two decades (e.g., Bauer et al., 2006; Cole & Maxwell, 2003; Selig & Preacher, 2009). Mediation analysis and moderation analysis are "two of the more widely used statistical methods" (Hayes, 2013, p. viii) and it is essential to follow robust methodological procedures when testing mediational hypotheses in a longitudinal study to avoid misleading conclusions (Cole & Maxwell, 2003). I applied mediation analysis to determine whether "some causal variable, X, influences some outcome, Y, through one or more mediator variables" M (Hayes, 2013, p. vii). Besides, I applied moderation analysis to determine whether the size of the effect of X on Y depends on a third variable or set of variables, called the moderator variable W (Hayes, 2013, vii). Baron and Kenny (1986) defined a moderator variable W as "a variable that affects the direction or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (p. 1174).

I analysed *simple mediation models* that included only one mediator variable in each model with two pathways in each by which a specific X variable (the independent variable) is proposed as influencing Y (the dependent variable). One pathway represents the direct effect of X on Y without passing through M (the mediator variable). The second pathway represents the indirect effect of X on Y through M; "the indirect effect is the degree, to which a change in X produces a change in Y by means of the mediator variable" (Colle & Maxwell, 2003, p. 558). The direct effect plus the indirect effect represents the total effect, which is the overall effect that an independent variable has on a dependent variable "whether or not the effect runs through an intervening variable" (Colle & Maxwell, 2003, p. 559). For example, what causes some people to stay at home? Rain causes this effect. However, this does not explain why many people do not stay at home when it rains. Thus, we can explain more about individuals' behaviour if we include

a mediator (i.e., “the desire to stay dry”). So, when it rains (X), there are some people who desire to stay dry (M), and those who desire to stay dry (M) will stay at home (Y). Also, the desire to stay dry (M) mediates the effect that rain (X) has on those staying at home (Y). Without the mediator, we can only explain the behaviour of those who stay at home when it rains, whereas with the mediator, we can also explain the behaviour of those who do not stay at home when it rains.

I also tested *parallel multiple mediator models*, which are similar to simple mediation models, except that they include more than one mediator variable in the model, and they operate without affecting one another. In other words, the mediators do not causally influence each other in the model and “X will be influencing Y directly and indirectly through the mediators” (Hayes, 2013, p. 125). Finally, I tested *moderated mediation models*, which will be indicated by a moderator variable W influencing the direct, indirect, and total effects of the mediated models (Edwards & Lambert, 2007). In other words, a moderated mediation is a conditional effect, which occurs when the effect of X on Y through a mediator M (the indirect effect) might change due to the levels of the moderator W (Baron & Kenny, 1986). Referring back to the example described earlier, when it rains (X), those who desire to stay dry (M) will stay at home (Y); this effect would be stronger among those who hate rain (W).

To demonstrate the mediation effects, I applied a longitudinal model to support the relations among the variables involving two waves. As stated by Colle and Maxwell (2003), “a fundamental requirement for one variable to cause another is that the cause must precede the outcome in time” (p. 559). Therefore, I measured the variables of my study at two points over 6 months, which is a considerable gap of time that allows the description of causality. I will expand on these concepts in later chapters.

Research variables. Based on an in-depth literature review related to my topic of interest, I considered students' academic self-efficacy as the dependent variable for the first four hypotheses and stress, anxiety, and depression for the last two. The former is a personal resource (Salanova et al., 2011) that relates to students' judgments of their capacity to perform a task successfully based on their skills (Bandura, 1977, 2010). The latter is a negative emotional state, which reduces students' coping skills and impacts their cognitive functioning and learning (Respondek et al., 2017). Additionally, I included several independent variables (i.e., level of intrinsic motivation, perceived academic control, harmonious passion, gratitude, and the level of factor differentiation of emotional experiences among university students, and students' levels of stress, anxiety, depression, and obsessive passion).

Research hypotheses. The following longitudinal hypotheses are based on the discussion presented in the literature. These are:

H1: Students' levels of Harmonious Passion (HP) and Obsessive Passion (OP) for academics, as well as students' Perceived Academic Control (PAC) at T2, mediate the relationship between Intrinsic Motivation (IM) at Time 1 and academic self-efficacy (ASE) at T2. Therefore, high levels of IM at T1 are associated with higher levels of HP and PAC at T2 and, in turn, with higher levels of ASE at T2. Then, low levels of IM at T1 are associated with higher levels of OP at T2 and, in turn, with lower levels of ASE at T2.

H2: The relationship between gratitude at T1 and Academic Self-efficacy (ASE) at T2 is mediated by Intrinsic Motivation (IM) at T2; therefore, high levels of gratitude at T1 are associated with higher levels of IM at T2 and, in turn, with higher levels of ASE at T2.

H3: The indirect effect of Gratitude at T1 on students' academic self-efficacy at T2 through students' IM at T2 is moderated by anxiety at T1; therefore, it is expected that the moderated mediation effect will be statistically significant.

H4: The relationship among Stress, Anxiety, and Depression (SAD) at T1, and Academic Self-efficacy (ASE) at T2 is mediated by Perceived Academic Control (PAC) at T2. Therefore, high levels of SAD at T1are associated with lower levels of PAC at T2 and, in turn, with lower levels of ASE at T2. Then, the relationship between SAD at T1, and ASE at T2 is mediated by Gratitude at T2; therefore, high levels of SAD at T1 are associated with lower levels of Gratitude at T2 and, in turn, with lower levels of ASE at T2.

H5: The relationship between Factor Differentiation (FD) at T1 and Stress, Anxiety, and Depression (SAD) at T2 is mediated by Perceived Academic Control (PAC) at T2; therefore, high levels of FD at T1 are associated with higher levels of PAC at T2 and with lower levels of SAD at T2.

H6: The indirect effect of Factor Differentiation (FD) at T1 on students' Stress, Anxiety, and Depression (SAD) at T2, through students' Perceived Academic Control (PAC) at T2, is moderated by Intrinsic Motivation (IM) at T1; therefore, it was expected that the moderated mediation effect would be statistically significant.

3.2. Sample

The unit of analysis of my investigation was first-year university students in the Faculty of Education, and Social Sciences enrolled in 2019 at a large HEI in Chile. It was a two-wave research study based on data collected through online questionnaires. The total number of students registered was 1,845. After 4 months, 79 dropped out, yielding a total of 1,766 first-year undergraduate students. At the beginning of the first semester of the academic year, participants signed an informed consent that was undertaken in two phases. Phase 1 (i.e., April and May 2019) consisted of the total population of first-year undergraduate students from the Faculty of Education and Social Sciences, and Phase 2 (i.e., August, September and the first 2 weeks of

October 2019) comprised the participants who fully responded to the questionnaires at Phase 1. The same data collection methods were applied during both Phases.

Phase 1 (i.e., Time 1) began on April 1st, 2019 and ended on May 31st, 2019. A total of 487 questionnaires were responded in a complete way via SurveyMonkey, yielding a first-wave response rate of 27.57% (i.e., 487 / 1,766). The second phase of data collection (i.e., Time 2) began on August 13th, 2019 and ended on October 18th 2019. At that time, of the 487 complete responses, 311 students completed the questionnaires, which represents a mortality rate (participants leaving during the research) of 36.13% (i.e., 176 / 487) and a second-wave response rate of 63.86% (i.e., 311 / 487). It was essential to ensure consistency in the reporting of the data; therefore, the 311 complete responses constituted the quantitative data final sample size of my study, which, in turn, represented an overall participation rate of 17.6%. To calculate the sample size of my research, I adopted the National Education Association published formula (Krejecie & Morgan, 1970). I concluded that the sample size of 311 could be generalized to a population of 1,750, which was very close to the 1,766 first-year undergraduate population in the Faculty of Education and Social Sciences.

I had intended to reach a sample of 319 participants, which was the exact size needed to be representative of the original size population of 1,845, before the 79 students who dropped out 4 months after the start date of classes and before the second wave of data collection began. For a population of 1,766, the sample size needed was 316, which was very close to the 311 sample size of my study. Unfortunately, and due to 2019 civil protests that took place in Santiago, which were extended over many other cities in Chile, the explosion of a social crisis occurred on October 18th, which is on hold due to the Coronavirus pandemic. Therefore, classes were interrupted, and several educational institutions, including the university where I work, decided to end the second semester's classes ahead of time. Consequently, I had to conclude my data

collection process at that time. If I had had one more week, I would have reached the 316 responses that I needed, and probably more. However, I was fortunate to be able to reach almost the sample size I had desired.

I sent several e-mails to the 1,766 students enrolled in 2019 during Phase 1, together with an invitation letter to participate in the study. Also, I attached a link that took them to the participant information sheet, the informed consent form, and 20-minute online questionnaires. Besides, the invitation letter summarized the purpose of the investigation and its relevance, and the phases of the study. The participant information sheet provided a general description of the study—for example, the theme, the general objective and the specific objectives, and a detailed description of what the participants had to do. Additionally, the participants learned about the characteristics of the questionnaires and the confidentiality of the information. In the informed consent, it was declared that, even though the participants knew that the results of the investigation could be published for academic purposes in the future, they understood that no information might reveal their identities. Students were informed that the online questionnaires would take approximately 20 minutes to complete. Instructions in each questionnaire specified that participants had to focus on their experiences attending classes, working on assignments, and preparing for examinations when answering each of the items. Once they had read the inform consent and clicked the button to continue, it was an indication of students' willingness to participate. In conclusion, participants voluntarily accepted to be part of the research project during the time that it lasted.

The most significant number of students who responded in both waves belonged to the Psychology programme, with a 47.0% response rate at Time 1 and a 42.8% at Time 2. Then, the second most significant number of students who fully responded to the questionnaires at Phase 1 and Phase 2 belonged to the Physical Education programme, who represented a 26.3% response

rate at Time 1 and a 31.5% response rate at Time 2. In third place, the English Pedagogy programme denoted a 12.3% response rate at Time 1 and a 14.1% at Time 2. The remainder of the programmes maintained a response rate lower than 10% in both waves. The breakdown of first-year university students in the nine programmes of the Faculty of Education and Social Sciences who responded at Phase 1 and Phase 2 is listed in Table 1.

Table 1

First-year University Students who Responded at Phase 1 (n = 487) and at Phase 2 (n = 311)

Programmes	Phase 1		Phase 2	
	n	*%*	*n*	*%*
Psychology	229	47.0	133	42,8
Sociology	10	2.1	5	1.6
Social Work	25	5.1	9	2.9
Physical Education	128	26.3	98	31.5
Elementary Education	6	1.2	3	1
Music Education	2	0.4	2	0.7
Preschool Education	13	2.7	6	1.9
English Pedagogy Education	60	12.3	44	14.1
Psychopedagogy	14	2.9	11	3.5
Total	487	100	311	100

As a preliminary analysis related to the participants' demographics across the 6-month study period, the first-wave response consisted of 56.9% women and 43.1% men between the ages of 17 and 46 years (M = 20.09, SD = 3.77). The second-wave response consisted of 56.6% women and 43.4% men between the ages of 17 and 46 years (M = 20.62; SD = 4.08). Concerning the types of schools within the Chilean educational system, there are three types: municipal schools, private subsidized schools, and private non-subsidized schools. The first two institutions

are mainly financed by the State, whereas private non-subsidized schools are not. The difference between municipal schools and private subsidized schools is that the State entirely funds the first, whereas both parents and the State finance the second. Most of the students from the sample came from private subsidized schools, 51.7% corresponded to Phase 1 and 49% to Phase 2. During the first wave, 30.0% of the respondents declared that they came from private non-subsidized schools, and 31.2% did so during the second wave. Finally, from those who responded at Time 1, 18.3% revealed that they came from municipal schools, wherein the State entirely funded their studies, and 19% at Time 2.

To conclude, the majority of the participants' parents had completed an undergraduate level of education. At Phase 1, 48.7% of the participants responded that their parents had completed an undergraduate degree, and 48.2% at Phase 2. Then, 35.1% of the respondents claimed they their parents had finished High School, and 35.4% did so at Time 2. Also, at Time 1, 12.7 % of the students declared that their parents had reached a graduate level and 13.2 % at Time 2. Finally, 3.5% mentioned that their parents had only reached Primary School level at Phase 1 and 3.4% did so in Phase 2. Table 2 presents information regarding the participants' demographics across the 6-month study period. Phase 1 represents the first-wave response of 487, and Phase 2 represents the second-wave response of 311, the quantitative data final sample size of my study.

Table 2

Participants' Demographics Across the 6-month Study Period (Phase 1, n = 487; Phase 2, n = 311)

	Phase 1		Phase 2	
Gender	*n*	%	*n*	%
Women	277	56.9	175	56.6

Men	210	43.1	136	43.4
Age				
Below 20	384	78.4	245	78.9
21 - 30	89	18.4	54	17.4
31 or more	14	2.4	12	3.7
Types of schools				
Municipal	89	18.3	60	19.3
Private subsidized	252	51.7	154	49.5
Private non-sub	146	30.0	97	31.2
Parents level education				
Primary school	17	3.5	10	3.2
High school	171	35.1	110	35.4
Undergraduate	237	48.7	150	48.2
Graduate	62	12.7	41	13.2
Total	487	100	311	100

3.3. Data Collection

I collected quantitative data using SurveyMonkey software over two periods of time via seven online questionnaires. These were: the Intrinsic Motivation Inventory (IMI), the Perceived Academic Control Scale, the Passion Scale, the Gratitude Questionnaire-Six Item Form (GQ-6), the Differentiation of Emotional Experience Scale, the Depression, Anxiety and Stress Scale-21, and the Academic Self-efficacy Inventory. The reliability of the scores in a study is essential to understand the relationships between the different variables (Henson, 2001). Thus, I computed Cronbach's Alpha values in SPSS (version 22) as the method to estimate the score internal consistency of the items involved in each of the scales of the current study (Weems et al., 2003, p. 594) "across a single administration of the instruments" (Onwuegbuzie & Daniel, 2002, p. 90) at both stages. According to Henson (2001), "Internal consistency estimates relate to the degree

to which the items on a test jointly measure the same construct" (p. 177). I calculated the internal consistency of the items of the instruments that I administered to determine whether the multiple items measuring the same constructs were reliable.

Kline (1999) claimed that coefficient values "should ideally be high, around .90 and alphas should never drop below .70" (p. 13). Taber (2018) analysed several articles from four science education journals *(International Journal of Science Education, Journal of Research in Science Teaching, Research in Science Education, and Science Education)* concerning the range of qualitative descriptions used by several different authors to interpret and to describe the alpha values calculated. She concluded that even though there is no clear consensus among researchers, "a value of around .70 or greater is widely considered desirable" (Taber, 2018, p. 1284). I administered the following instruments:

Intrinsic Motivation Inventory (IMI). To assess the levels of IM, I administered the IMI created by Ryan and Deci (2000). It is a multidimensional measurement instrument based on the self-determination theory described earlier in the literature review section of the current Thesis, which assesses motivation in several situations and contexts (Deci & Ryan, 2000; Ryan, 1982). The inventory's psychometric properties have been examined in many studies, and results have supported its internal consistency (Tsigilis & Theodosiou, 2003). The full 45-item IMI comprises seven subscales that assess participants' interest and enjoyment, perceived competence, effort and importance, pressure and tension, perceived choice, value and usefulness, and, finally, relatedness while performing an activity. Four specific versions include different numbers of items and subscales that have been used in several studies. Past research indicated that the inclusion or exclusion of items or subscales has no impact on the others and that the IMI items often have been modified slightly to fit specific activities (Monteiro et al., 2015). For the current study, I focused on three of the seven subscales (i.e., interest and enjoyment, effort and importance, and

value and usefulness) that included three items relevant to fit what I intended to analyse, and based on the theoretical literature review. For each of the items, participants had to indicate how true these were for them on a 7-point, Likert-format scale (1 = strongly disagree, 2 = disagree, 3 = indifferent, 4 = agree, 5 = strongly agree, 6 = very true, and 7 = totally true). High scores represent high levels of intrinsic motivation, and low scores represent low levels of intrinsic motivation. For the present study, scores pertaining to the IMI had an α reliability coefficient of .87 in T1 and .86 in T2. (See Appendix 1 and Table 3.)

Perceived Academic Control Scale (PAC). To assess the level of students' perceived academic control, I administered the PAC Scale. It is an eight-item instrument with strong psychometric properties (Perry et al., 2001), and it is "related to influencing academic achievement outcomes" (p. 778). Individuals rated the items using a 5-point, Likert-format scale (1 = strongly disagree, 2 = disagree, 3 = indifferent, 4 = agree, and 5 = strongly agree). High scores represent high levels of perceived academic control, and low scores represent low levels of perceived academic control. For the current research, scores pertaining to the Perceived Academic Control Scale had an α reliability coefficient of .71 in T1 and .72 in T2. (See Appendix 2 and Table 3.)

Passion Scale. To learn about students' levels of passion, I administered the Passion Scale, a 17-item instrument, which includes two six-item subscales assessing harmonious passion and obsessive passion toward an activity (Vallerand et al., 2003), and a set of criterion single-items that I did not include in the present study. Researchers have provided support for the factor structure of the instrument through exploratory factor analysis and confirmatory factor analysis, and have evidenced good internal consistency (Rousseau & Vallerand, 2008; Vallerand, 2015). The Spanish version was tested in Spain, and the results provided empirical evidence for its score validity and internal consistency, revealing strong psychometric properties and becoming

comparable to the English and French versions (Chamarro et al., 2015). The instrument assesses whether the respondents' involvement in their classes and activities, or while working on assignments, can be considered a passion. Participants responded to each item using a 7-point Likert-format scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = indifferent, 5 = slightly agree, 6 = agree, and 7 = totally agree). High scores represent high levels of passion, and low scores represent low levels of passion. For the current study, scores pertaining to the Passion Scale had an α reliability coefficient of .73 in T1 and .72 in T2. Scores pertaining to the Harmonious Passion Subscale had an α reliability coefficient of .80 in T1 and .78 in T2. Finally, scores pertaining to the Obsessive Passion Subscale had an α reliability coefficient of .66 in T1 and .69 in T2. (See Appendix 3 and Table 3.)

Gratitude Questionnaire-six Item Form (GQ-6). To collect information concerning students' levels of gratitude, I administered the GQ-6, a 6-item instrument. Individuals rated the items using a 7-point, Likert-format scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = indifferent, 5 = slightly agree, 6 = agree, and 7 = totally agree). The GQ-6 has been found to have excellent psychometric properties and high internal consistency (Froh et al., 2011; McCullough et al., 2002) and it has been successfully tested among Spanish-speaking populations, such as the Chilean population (Carmona-Halty et al., 2015). High scores on the scale represent high levels of gratitude, and low scores represent low levels of gratitude. For the current research, scores pertaining to the Gratitude Questionnaire Scale had an α reliability coefficient of .74 in T1 and .70 in T2. (See Appendix 4 and Table 3.)

Differentiation of Emotional Experience Subscale. To collect information regarding students' emotional awareness, I administered the score-validated Range and Differentiation of Emotional Experience Scale. It is a useful 14-item instrument to learn about individuals' emotional experiences, levels of emotional maturity, and levels of positive relationships. The

instrument has acceptable internal consistency, and it contains two subscales (i.e., Factor Range and Factor Differentiation) with seven items in each. The Factor Range of Emotional Experience Subscale focuses on "a broad range of emotional experiences," and the Factor Differentiation of Emotional Experience Subscale focuses on "a propensity to make subtle distinctions within emotion categories" (Kang & Shaver, 2004, p. 689). For this study, I only used the Factor Differentiation of Emotional Experience Subscale because I was interested in learning about how capable an individual is to distinguish differences among similar emotions. Participants responded to each item using a 5-point, Likert-format scale (1 = strongly disagree, 2 = disagree, 3 = indifferent, 4 = agree, and 5 = strongly agree). High scores indicate high levels of factor differentiation of emotional experiences, and low scores indicate low levels of factor differentiation of emotional experiences. For the current research, scores pertaining to the Factor Differentiation of Emotional Experiences Subscale had an α reliability coefficient of .72 in T1 and .75 in T2. (See Appendix 5 and Table 3.)

Depression, anxiety and stress scale-21 (DASS-21). To determine the level of stress, anxiety, and depression, I administered the DASS-21. The original version of the DASS consisted of 42 items and the brief version comprised 21 items. Several researchers have assessed the psychometric properties of the DASS-21, which have shown satisfactory results (Alfonsson et al., 2017). The instrument was tested among Chilean university students as well and has demonstrated sufficient score reliability and internal consistency (Antúnez & Vinet, 2012).

The DASS-21 is an instrument used in many studies to measure psychological symptoms and distress, and in several other studies to measure symptoms of anxiety, depression, and stress with reliable outcomes, even after translation into other languages (Alfonsson et al., 2017). Like the original DASS-42, the DASS-21 includes three subscales (i.e., Depression, Anxiety, and Stress) with seven items in each scale. For each of the items, participants had to indicate how true

these were for them on a 4-point, Likert-format scale (1 = never, 2 = sometimes, 3 = often, and 4 = almost always). High scores represent high levels of symptoms in each subscale, and low scores represent low levels of symptoms in each subscale. Further, the items as a whole can represent a total score to measure general psychological distress. For the current research, scores pertaining to the DASS-21 Scale had an α reliability coefficient of .93 in T1 and .94 in T2. Scores pertaining to the Anxiety Subscale had an α reliability coefficient of .83 in T1 and .84 in T2; pertaining to the Stress Subscale, an α reliability coefficient of .85 in T1 and .87 in T2; and, finally, pertaining to the Depression Subscale, an α reliability coefficient of 0.87 in T1 and 0.87 in T2. (See Appendix 6 and Table 3.)

Academic Self-efficacy Inventory. To learn about students' levels of self-efficacy, I administered the Academic Self-efficacy Inventory. Statistical indicators have shown the robustness of the instrument, and results have supported its internal consistency (Galleguillos, 2017). The Academic Self-efficacy Inventory measures the degree of academic self-efficacy of students and their perceptions regarding their ability to carry out academic tasks successfully (Galleguillos, 2017, p. 120). The full 18-item Academic Self-efficacy Inventory measures three factors (i.e., effort in completing the task, confidence in the task, and task understanding). I focused on six of the 18 items; three were related to "effort in completing the task" and the other three to "confidence in the task." For each of the items, participants had to indicate how true these were for them on a 5-point, Likert-format scale (1 = I can never; 2 = I can hardly ever; 3 = I don't know what to answer; 4 = I can almost always; 5 = I can always). High scores represent high levels of academic self-efficacy, and low scores represent low levels of academic self-efficacy. For the current research, scores pertaining to the Academic Self-efficacy Inventory had an α reliability coefficient of .77 in T1 and .76 in T2. (See Appendix 7 and Table 3.)

I also decided to report the results of single-construct subscales rather than only on the instrument items as a whole to calculate the Cronbach's Alpha values (Adams & Wieman, 2010). The reason is that "reporting only an overall alpha value, when an instrument is comprised of several discrete scales, is less useful to readers" (Taber, 2018, p. 1285). See Table 3 for information on coefficient alphas calculated using the quantitative data final sample size of 311 for my study.

Table 3

Summary of Cronbach's Alpha (n = 311)

Scales and Subscales	Number of items	Cronbach's Alpha (α)		*Range*
		Time 1	Time 2	
IMI	9	.87	.86	1-7
PAC	8	.71	.72	1-5
Passion	12	.73	.72	1-7
HP	6	.80	.78	1-7
OP	6	.66	.69	1-7
GQ	6	.74	.70	1-7
FD	7	.72	.75	1-5
DASS-21	21	.93	.94	1-4
Anxiety	7	.83	.84	1-4
Stress	7	.85	.87	1-4
Depression	7	.87	.87	1-4
ASE	6	.77	.76	1-5

Note. Intrinsic Motivation Inventory = IMI; Perceived Academic Control Scale = PAC; Harmonious Passion = HP; Obsessive Passion = OP; Gratitude Questionnaire = GQ; Factor Differentiation of Emotional Experience Scale = FD; Depression, Anxiety and Stress Scale-21 = DASS-21; Academic Self-efficacy Inventory = ASE

Little's (1988) missing completely at random (MCAR). The step of assessing missing data was conducted because ignoring them could be problematic. Thus, before engaging in my data analysis and presenting the findings of the study, it was crucial to determine whether the collected data were missing completely at random or not. Consequently, I performed a statistical test called Little's Missing Completely at Random (MCAR), which is a mechanism of missing data. The best way to deal with the missing values is to test the hypotheses as to whether the data are missing randomly or whether the missing data are dependent on some other variables (Little, 1988). The hypothesis to be tested is the null hypothesis and is tested against an alternative hypothesis, which "can be supported only by rejecting the null hypothesis" (Hinkle et al., 2003, p. 176). It can be stated that the concept of the null hypothesis is similar to the idea of innocent until proven guilty. Therefore, the null hypothesis for Little's MCAR test is that the data are missing completely at random when the statistical significance value is higher than .05, which means that there is no statistical significance between the variables of the study. When the statistical significance value is less than or equal to .05, the data are not missing completely at random (Little, 1988). The analysis entails "making inferences about the nature of the population based on observation of a sample drawn from the population" (Hinkle et al., 2003, p. 174).

The missing data of the current study were 176 students who dropped out of the survey at Time 2. I tested the missing values for each of the items of the questionnaires to determine whether the data were missing completely at random or not. Because the statistical significance value in each of the scales was higher than .05, I was able to conclude that the data were missing completely at random. To be more specific, Little's MCAR test (Little, 1988) showed that missing data were completely at random. See Table 4 for information on missing data for each of the instruments of the current study calculated using the quantitative sample size of Phase 1 (*n* =

487). Further, see Table 5 for information on missing data regarding the demographic variables calculated using the quantitative sample size of Phase 1 (*n* = 487).

Table 4

Little's Missing Completely at Random MCAR Test (n = 487)

Scales	Chi-square	Degrees of freedom	Sig
IMI	8.12	9	.521
PAC	3.66	8	.886
Passion	9.86	12	.628
HP	6.59	6	.360
OP	3.53	6	.739
GQ	7.74	6	.257
FD	12.71	7	.079
DASS-21	29.92	21	.093
Anxiety	10.56	7	.159
Stress	9.24	7	.235
Depression	5.66	7	.579
ASE	.54	6	.997

Notes. Intrinsic Motivation Inventory = IMI; Perceived Academic Control Scale = PAC; Harmonious Passion = HP; Obsessive Passion = OP; Gratitude Questionnaire = GQ; Factor Differentiation of Emotional Experience Scale = FD; Depression, Anxiety and Stress Scale-21 = DASS-21; Academic Self-efficacy Inventory = ASE

Table 5

Little's Missing Completely at Random MCAR Test on demographic variables (n = 487)

Demographic variables	Chi-square	Degrees of freedom	Sig
Gender	.037	1	.848
Age	.285	1	.593

Because the statistical significance value on the demographic variables was higher than .05, I was able to conclude that the data were missing completely at random.

3.4. Data Analysis

To process the quantitative data of the final sample size of my study, the 311 complete responses in Phase 1 and Phase 2, I used SPSS, and I performed a multiple regression analysis to examine a variety of alternative explanations for the associations between multiple predictors on an outcome variable (Hayes, 2013). In other words, I included more than one predictor to investigate the role of multiple influences simultaneously on the outcome variable (Hayes, 2013). I used moderation and mediation models as inferential statistical techniques to analyse the relations among variables (Cohen et al., 2011) and to predict the extent to which changes in any of the independent variables influenced students' levels of academic self-efficacy and students' levels of stress, anxiety, and depression. Therefore, I treated certain variables as mediators and others as moderators to analyse the strength of the relation between the independent variables and dependent variable. Moreover, I focused not only on the direct effect of independent variables on the dependent variable but also on the indirect and total effects via the mediators (Baron & Kenny, 1986).

To test Hypotheses 1, 2, 4, and 5, I performed a mediation analysis using Model 4 of the PROCESS (Hayes, 2013). I analysed *simple mediation models* to test Hypotheses 2 and 5 that included one mediator variable in each model. Thus, I focused on two pathways in each model; one that represented the direct effect of X, the independent variable, on Y, the dependent variable, without passing through the mediator variable. Moreover, the second pathway I analysed in the *simple mediation models* represented the indirect effect of X on Y through the mediator variable. I wanted to determine whether changes in X were influencing and provoking changes in Y because of the presence of the mediator variable (Colle & Maxwell, 2003). Thus, I

tested the correlation between the independent and the dependent variables. Then, I analysed the correlation between the independent and the mediator variables and, finally, I focused on the relation between the mediator and the dependent variable. I expected to find that the correlations were statistically significant (Baron & Kenny, 1986). In the case of Hypotheses 1 and 4, I tested *parallel multiple mediator models* in which X influenced Y directly and indirectly through three mediators, in the case of Hypothesis 1, and through two mediators, in the case of Hypothesis 4. For Hypotheses 3 and 6, I performed a *moderated mediation analysis*, using the Model 7 of the PROCESS (Hayes, 2013) to analyse the conditional effect that occurs when the impact of an independent variable on a dependent variable through a mediator variable might change depending on the levels of the moderator (Baron & Kenny, 1986).

For Hypothesis 1, I treated Intrinsic Motivation (IM) at Time 1 (T1) as the independent variable and Harmonious Passion, Obsessive Passion, and Perceived Academic Control (PAC) at Time (T2) as the mediators. Introducing different mediators and correlating them with the dependent variable to compare the sizes of the indirect effects increased the power of the analysis (Hayes, 2013). For Hypothesis 2, I treated Gratitude at T1 as the independent variable and IM at T1 as the mediator. For Hypothesis 3, I included the same variables used in Hypothesis 2, but I treated Anxiety at T1 as the moderator of the indirect effect. For Hypothesis 4, I treated Stress, Anxiety, and Depression (SAD) at T1 as the independent variable and PAC and Gratitude at T2 as the mediators. For Hypothesis 5, I treated Factor Differentiation (FD) at T1 as the independent variable and PAC at T2 as the mediator. For Hypothesis 6, I included the same variables used in Hypothesis 5, but I treated IM at T1 as the moderator of the indirect effect. The dependent variable for Hypotheses 1, 2, 3, and 4 was Academic self-efficacy at T2, whereas SAD at T2 was the dependent variable in Hypotheses 5 and 6.

3.5. Ethical Considerations

To begin with, my Thesis project, I needed approval from the University of Liverpool. Thus, I worked on a set of documents for ethical approval and sent my ethics application forms to the EdD Virtual Programmes Research Ethics Committee (VPREC) for consideration. Among the collection of documents that I had to provide for my ethics application form, I also needed to include my local ethics review and approval before the submission for University ethical review from the University of Liverpool. The ethical approval process involved a long, rigorous, and meticulous work not only from the University of Liverpool but also from my local institution to secure the standards of quality and integrity in its research. The application for recognition of external ethics committee approval required me to include a copy of the participant information sheet, a copy of the participant consent form, the ethics application form, the local ethics approval form, and the EdD Ethics Reviewer Form. Without these documents, the VPREC would not have been able to proceed with my ethical application form. After several interactions and online meetings involved in the process of the revision of the documents already described, the VPREC officially sent the approval decision.

The current study involved collecting data from people, which brought potential threats to my research and the participants (Cohen et al., 2011). Because the items included in the instruments were related to sensitive issues, I feared that participants could feel threatened or exposed (Cohen et al., 2011). Even though the responses were anonymous, sensitivity could have derived from the perception of intrusion into privacy. I strategically planned and anticipated any potential situation that could have harmed either the researcher or the participants. Some participants could have withdrawn at any time of the investigation process, and they did. However, the number of students who left the study did not jeopardize the size needed to be representative of the original population.

One of the actions that I took to address the ethical issues involved in the Thesis project was to inform the academic community about the purpose and general objectives of the study via the informed consent form. I did this before the participants embarked on the questionnaires (Oliver, 2003). Including informed consent early during the investigation process was strategic because it protected both the researcher and the participants, and placed some of the responsibility on the latter (Cohen et al., 2011). In the informed consent, I shared the aim of the study, and I described the questionnaires involved. In addition, I specified the number of times the instruments were going to be applied, and the approximate time required to respond. Finally, the informed consent included issues of confidentiality and the way the findings were going to be disseminated. It is essential to be specific and transparent even before the data collection process begins because it reduces potential ethical problems with the participants and increases mutual trust between the researcher and the participants (Cohen et al., 2011). It is vital to be sensitive not only during the data collection stage but also during the data analysis stage, the interpretation stage, and the dissemination stage (Oliver, 2003).

3.6. Summary

I conducted a longitudinal quantitative research study to learn about the effects of time on a variety of emotional factors. I collected data from the same group of individuals over two points in time with approximately a 6-month timeframe. I applied seven online questionnaires to examine possible changes among the variables of the study. The unit of analysis of the current research was first-year university students in the Faculty of Education, and Social Sciences enrolled in 2019 at a large HEI in Chile. Phase 1 represented the first-wave response of 487, and Phase 2 represented the second-wave response of 311, the quantitative data final sample size of my study. I computed Cronbach's Alpha values in SPSS (version 22) as the method to estimate the internal score consistency of the items involved in each of the scales of the current study at

both stages. Finally, and before engaging in my data analysis and presenting the findings of the study, I performed a statistical test called Little's Missing Completely at Random (MCAR), which is a mechanism of missing data. The missing data were 176 students who dropped out of the survey in Phase 2. Because the statistical significance value in each of the scales was higher than .05, I was able to conclude that the data were missing completely at random.

Finally, I briefly explained how I planned to undertake a regression-based path analysis to estimate direct and indirect, and conditional and unconditional effects. I tested simple mediation analysis, parallel multiple mediator models, and moderated mediation analysis, which I will describe in the coming chapter.

Chapter 4. Findings

The purpose of Chapter 4 is to present the findings of the study. I begin with a preliminary analysis of the data that includes a descriptive analysis and Pearson's *r* correlation for each of the variables of the current research Thesis. Finally, I report the results of the items of each of the instruments that I administered and the analysis of each of the hypotheses regarding the mediation and moderation models.

4.1. Preliminary Analysis

Descriptive statistics. Descriptive statistics allowed me to summarise the overall tendencies in the data collected and the variability that "indicates the spread of the scores in a distribution" (Creswell, 2012, p. 186). Specifically, descriptive statistics included means (*M*), which represents the average score, and standard deviation (*SD*), which is the square root of the variance and "an indicator of the dispersion or spread of the scores" (Creswell, 2012, p. 186). The variance is the "average of the sum of the squared deviations around the mean" (Hinkle et al., 2003, p. 66).

The correlation coefficient is an index that describes the relationship between two variables (Hinkle et al., 2003, p. 98). Specifically, the correlation coefficient widely used is the "Person product-moment correlation coefficient, the average cross-product of the standard scores of two variables," which was developed by Karl Pearson (1857-1936) and symbolized by *r* (Hinkle et al., 2003, p. 101). Pearson's *r* measures the relationship between two variables "which must be paired observations for the same set of individuals" (Hinkle et al., 2003, p. 104). This correlation coefficient measures the linearity of the data (Onwuegbuzie & Daniel, 2002). The relationship between variables can be positive (i.e., lower-left-to-upper-right pattern in a scatterplot; $0 < r < +1.0$), negative (i.e., upper-left-to-lower-right pattern in a scatterplot $-1.0 < r < 0$), or zero ($r = 0$). The closer the correlation is to either -1.0 or +1.0 inclusive, the stronger the

relationship between the two variables. A correlation coefficient between .10 and < .30 (-.10 and > -.30) indicates a weak or low positive (negative) correlation; and between .30 and < .50 (-.30 and > -.50) indicates a moderate positive (negative) correlation. Finally, a correlation coefficient of ≥ .50 (≤ -.50) indicates a strong or high positive (negative) correlation (Cohen, 1988).

For each of the variables of the current study, means, standard deviation, and Pearson's *r* correlations with the other variables were calculated and are reported in the correlation matrix in Table 6 (*n* = 311). Two-tailed *p* values were reported for each of these correlations. Because the purpose of the Thesis study was to examine the mediation and moderation models assumed to underlie these data, the correlation matrix was not interpreted.

Table 6

Means, Standard Deviation, Correlation Coefficients and the Value of Pearson's r

				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	IM_T1	4,31	,57	1																					
2	IM_T2	4,23	,52	,38**	1																				
3	PAC_T1	4,01	,52	,32**	,24**	1																			
4	PAC_T2	4,00	,51	,20**	,33**	,47**	1																		
5	PP_1	4,44	,85	,33**	,17**	,03	-,04	1																	
6	PP_2	4,32	,85	,21**	,32**	-,02	-,05	,58**	1																
7	HP_T1	5,36	1,08	,42**	,28**	,37**	,18**	,75**	,46**	1															
8	HP_T2	5,29	1,05	,27**	,48**	,22**	,29**	,37**	,73**	,54**	1														
9	OP_T1	3,53	1,14	,10	-,01	-,30**	-,22**	,78**	,44**	,18**	,03	1													
10	OP_T2	3,34	1,19	,07	,04	-,22**	-,33**	,52**	,80**	,19**	,17**	,60**	1												
11	G_T1	5,49	,97	,24**	,19**	,35**	,25**	,17**	,06	,39**	,24**	-,11	-,13*	1											
12	G_T2	5,72	,89	,10	,22**	,30**	,33**	,00	,02	,20**	,27**	-,19**	-,21**	,50**	1										
13	FD_1	3,91	,51	,33**	,26**	,15**	,16**	,31**	,14*	,34**	,16**	,14*	,06	,31**	,14*	1									
14	FD_2	3,90	,52	,05	,23	,07	,16**	,07	,14*	,13*	,20**	-,02	,03	,03	,18**	,34**	1								
15	SAD_T1	1,90	,59	-,01	-,06	-,38**	-,29**	,06	,01	-,26**	-,28**	,34**	,26**	-,34**	-,30**	,10	,00	1							
16	SAD_T2	1,91	,61	,04	-,11	-,26**	-,26**	,15**	,03	-,15**	-,27**	,37**	,28**	-,22**	-,31**	,15**	,06	,67**	1						
17	AnxT1	1,88	,66	,04	-,01	-,38**	-,27**	,12*	,03	-,18**	-,25**	,35**	,25**	-,25**	-,26**	,13**	-,02	,91**	,64**	1					
18	AnxT2	1,92	,69	,02	-,05	-,27**	-,24**	,18**	,07	-,11	-,21**	,36**	,27**	-,18**	-,22**	,17**	,09	,61**	,92**	,65**	1				
19	AA_T1	3,71	,61	,25**	,25**	,32**	,26**	,30**	,14*	,45**	,30**	,02	-,06	,29**	,15**	,25**	,13*	-,33**	-,22**	-,26**	-,18**	1			
20	AA_T2	3,76	,62	,20**	,37**	,28**	,36**	,15**	,27**	,31**	,46**	-,07	-,02	,25**	,29**	,09	,22**	-,32**	-,32**	-,28**	-,27**	,60**	1		
21	Gender	1,44	,51	-,18**	-,17**	-,04	-,05	,01	,00	-,03	-,06	,05	,05	-,20**	-,20**	-,19**	-,10	-,14*	-,11	-,16**	-,14*	-,03	-,01	1	
22	Age	4,16	4,02	,15**	,19**	,08	,10	-,04	-,06	,02	,03	-,08	-,12*	,07	,09	,10	,12	-,14	-,15*	-,10	-,13*	,10	,14*	,10	1

Note. N = 311. *p < .05, **p < .01, ***p < .001
**Correlation is significant at the .01 level (2 tailed).
*Correlation is significant at the .05 (2 tailed).

Intrinsic Motivation = IMI; Perceived Academic Control = PAC; Passion = PP; Harmonious Passion = HP; Obsessive Passion = OP; Gratitude = G; Factor Differentiation of Emotional Experience = FD; Depression, Anxiety and Stress = SAD; Anxiety = ANX; Academic Self-efficacy = AA

I used Hayes's PROCESS Macro for SPSS version 22 to undertake the regression-based path analysis. SPSS uses ordinary least squares (OLS) regression and implements "methods of inferences such as bootstrap confidence intervals" for total, direct, and indirect effects (Hayes, 2013, p. ix). The direct effect is the pathway that goes from the independent variable (X) to the dependent variable (Y) without passing through the mediator variable (M). The indirect effect is the pathway that goes from X to Y through M. Finally, the total effect is the sum of the direct effect and the indirect effect, as I mentioned in the previous chapter. SPSS is a computational tool that allowed me to estimate the models of my study by calculating the path analysis-based moderation and mediation, as well as various effects such as indirect, direct, and total effects, which I quantified using OLS, a common practice with observed variable path analysis. The current analysis was conducted with a 95% confidence interval for the indirect effect with 5,000 bootstrap samples.

4.2. The results of the Items of the Instruments

The following tables (Table 7, Table 8, Table 9, Table 10, Table 11, Table 12, and Table 13) reveal the percentages of disagreement and agreement of the items of each of the instruments, as well as their respective means and standard deviations. In relation to the Intrinsic Motivation Inventory (see Table 7), it is interesting to highlight that, for every item and for both time points, the percentage of the students who agreed was significantly (i.e., at least 68.45%) higher than the percentage of those who disagreed. The following items generated the most disagreement: *"This activity was fun to do"* (Item 2) at T1 and *"I put a lot of effort into this activity"* (Item 4) at T2. The following items generated the most agreement at both time points: *"It was important to me*

to do well at this task" (Item 6), *"I believe this activity could be of some value to me"* (Item 7), *"I believe doing this activity could be beneficial"* (Item 8), and *"I think this is an important activity"* (Item 9). Also, at both time points, the item that yielded the lowest mean was *"This activity was fun to do"* (Item 2) and the item that generated the highest mean was *"I enjoyed doing this activity very much"* (Item 1).

Table 7

Descriptive Statistics for all Items on the Intrinsic Motivation Inventory (1-7)[a]

Item Number	Item	% Disagreeing	% Neutral	% Agreeing	*M*	*SD*
1	I enjoyed doing this activity very much	5.8 (4.2)	15.1 (10.6)	79.1 (85.2)	4.88 (4.93)	1.04 (0.86)
2	This activity was fun to do	8.4 (6.4)	14.8 (15.1)	76.8 (78.5)	3.88 (3.83)	0.87 (0.75)
3	I would describe this activity as very interesting	4.8 (2.9)	12.9 (13.5)	82.3 (83.6)	4.00 (4.01)	0.80 (0.70)
4	I put a lot of effort into this activity	5.1 (6.8)	19.0 (22.5)	75.9 (83.6)	3.99 (3.89)	0.87 (0.89
5	I tried very hard on this activity	5.8 (4.5)	10.6 (19.3)	83.6 (76.2)	4.02 (3.93)	0.85 (0.80)
6	It was important to me to do well at this task	2.6 (1.0)	0.6 (5.1)	96.8 (93.9)	4.62 (4.44)	0.73 (0.65)
7	I believe this activity could be of some value to me	1.6 (1.6)	4.5 (7.1)	93.9 (91.3)	4.46 (4.37)	0.72 (0.73)
8	I believe doing this activity could be beneficial	2.9 (1.0)	4.8 (8.4)	92.3 (90.7)	4.44 (4.38)	0.77 (0.70)
9	I think this is an important activity	1.6 (1.3)	2.3 (8.4)	96.1 (90.4)	4.51 (4.38)	0.69 (0.71)

[a] The numbers that are not in parentheses represent Time 1 and the numbers that are in parentheses represent Time 2

The following item from the Perceived Academic Control Scale (see Table 8) generated the most disagreement: *"When I do poorly in a course, it's usually because I haven't given it my best effort"* (Item 7) at T1. The responses to the reversed items revealed that students had difficulties in understanding them. For example, 74.6% at T1 and 73.6% at T2 agreed on *"My*

grades are basically determined by things beyond my control, and there is little I can do to change that" (Item 8). At the same time, 74.6% at T1 and 77.2% at T2 agreed on *"When I do poorly in a course, it is usually because I haven't given it my best effort"* (Item 7). Thus, these responses are inconsistent. Another example of students' inconsistency responses revealed the following: 86.2% at T1 and 82.0% at T2 agreed on *"There is little I can do about my performance in university"* (Item 6). However, 92.9% at T1 and 91.3% at T2 believed that *"I see myself as largely responsible for my performance throughout my college career"* (Item 4), which, in turn, was the item that generated the most agreement at both time points.

Finally, the item that yielded the lowest mean was *"I have a great deal of control over my academic performance in my courses"* (Item 1) at Time 2. In addition, the item that generated the highest mean was *"I see myself as largely responsible for my performance throughout my college career"* (Item 4) at Time 1. Based on these results, and even though students did not understand the reversed items, I conclude that participants showed high levels of perceived academic control.

Table 8

Descriptive Statistics for all Items on the Perceived Academic Control Scale (1-5)[a]

Item Number	Item	% Disagreeing	% Neutral	% Agreeing	*M*	*SD*
1	I have a great deal of control over my academic performance in my courses	12.2 (10.9)	17.7 (18.3)	70.1 (70.7)	3.69 (3.68)	0.86 (0.81)
2	The more effort I put into my courses, the better I do in them	7.1 (5.8)	8.7 (10.0)	84.2 (84.2)	4.15 (4.20)	0.93 (0.84)
3	No matter what I do, I can't seem to do well in my courses (reversed item)	11.6 (9.6)	22.5 (21.2)	65.9 (69.1)	3.74 (3.84)	1.01 (0.94)
4	I see myself as largely responsible for my performance throughout my college career.	1.0 (1.6)	6.1 (7.1)	92.9 (91.3)	4.35 (4.28)	0.64 (0.66)
5	How well I do in my courses is often the "luck of the draw." (reversed item)	6.4 (7.1)	10.9 (11.6)	82.6 (81.4)	4.17 (4.09)	0.91 (0.91)

6	There is little I can do about my performance in university (reversed item)	4.8 (7.1)	9.0 (10.9)	86.2 (82.0)	4.25 (4.17)	0.85 (0.95)
7	When I do poorly in a course, it is usually because I haven't given it my best effort.	13.8 (9.2)	11.6 (13.2)	74.6 (77.2)	3.82 (3.90)	1.03 (0.92)
8	My grades are basically determined by things beyond my control, and there is little I can do to change that (reversed item)	7.7 (8.0)	17.7 (18.3)	74.6 (73.6)	3.98 (3.91)	0.95 (0.90)

[a] The numbers that are not in parentheses represent Time 1 and the numbers that are in parentheses represent Time 2

In relation to the Passion Scale (see Table 9), it is interesting to highlight that, for both time points, the items that yielded the highest percentages of agreement were those related to the Harmonious Passion Subscale (HP) and those that showed the highest percentages of disagreement belonged to the Obsessive Passion Subscale (OP). The following items generated the most disagreement at both time points: *"This activity is so exciting that I sometimes lose control over it"* (Item 11) and *"If I could, I would only do my activity*" (Item 9). The following items generated the most agreement at both time points: *"The new things that I discover with this activity allow me to appreciate it even more"* (Item 3), *"This activity allows me to live a variety of experiences"* (Item 6), and *"My activity is well integrated into my life"* (Item 8). The difference between those who disagreed and those who agreed on *"I have difficulties controlling my urge to do an activity"* (Item 2) was low (i.e., 0.3% at T1 and 6.4 at T2). Finally, at both time points, the item that yielded the lowest mean was *"This activity is so exciting that I sometimes lose control over it"* (Item 11) and the item that generated the highest mean was *"The new things that I discover with this activity allow me to appreciate it even more"* (Item 3).

Table 9

Descriptive Statistics for all Items on the Passion Scale (1-7)[a]

Item Number	Item	% Disagreeing	% Neutral	% Agreeing	*M*	*SD*
1	This activity is in harmony with the other activities in my life (HP)	17.0 (18.3)	14.1 (16.4)	68.8 (65.3)	5.19 (5.06)	1.80 (1.76)
2	I have difficulties controlling my urge to do my activity (OP)	36.0 (37.3)	28.3 (31.8)	35.7 (30.9)	3.99 (3.86)	1.88 (1.78)
3	The new things that I discover with this activity allow me to appreciate it even more (HP)	1.9 (2.3)	15.8 (12.5)	82.3 (85.2)	5.93 (5.91)	1.12 (1.07)
4	I have almost an obsessive feeling for this activity (OP)	42.4 (46.3)	37.9 (36.0)	19.6 (17.7)	3.59 (3.34)	1.74 (1.74)
5	This activity reflects the qualities I like about myself (HP)	13.2 (13.8)	39.5 (38.9)	47.3 (47.3)	4.77 (4.71)	1.57 (1.59)
6	This activity allows me to live a variety of experiences (HP)	6.1 (7.4)	17.7 (20.9)	77.2 (71.7)	5.65 (5.49)	1.36 (1.46)
7	This activity is the only thing that really turns me on (OP)	46.6 (51.1)	24.8 (21.5)	28.6 (27.3)	3.60 (3.42)	1.93 (1.96)
8	My activity is well integrated in my life (HP)	8.4 (9.0)	14.1 (16.1)	77.5 (74.9)	5.55 (5.45)	1.39 (1.42)
9	If I could, I would only do my activity (OP)	52.4 (59.8)	20.3 (14.1)	27.3 (26.0)	3.43 (3.18)	2.07 (2.13)
10	My activity is in harmony with other things that are part of me (HP)	16.1 (15.8)	19.6 (16.4)	64.3 (67.8)	5.07 (5.17)	1.73 (1.71)
11	This activity is so exciting that I sometimes lose control over it (OP)	54.3 (65.9)	30.9 (20.3)	14.8 (13.8)	3.07 (2.77)	1.69 (1.74)
12	I have the impression that my activity controls me (OP)	44.4 (48.6)	28.0 (25.1)	27.7 (26.4)	3.63 (3.48)	1.86 (1.94)

[a] The numbers that are not in parentheses represent Time 1 and the numbers that are in parentheses represent Time 2

The following item from the Gratitude Questionnaire (see Table 10) generated the most disagreement at both time points: *"I am grateful to a wide variety of people"* (Item 4). The following items caused the most agreement at both time points: *"I have so much in life to be thankful for"* (Item 1) and *"When I look at the world, I don't see much to be grateful for"* (Item

3). The responses to the reversed items revealed that students had difficulties in understanding them. For example, 79.5% at T1 and 81.0% at T2 agreed on *"If I had to list everything that I felt grateful for, it would be a very long list"* (Item 2). At the same time, and at both time points, 93.2% agreed on *"When I look at the world, I don't see much to be grateful for"* (Item 3). Thus, these responses are inconsistent. In addition, at both time points, the item that yielded the lowest mean was *"As I get older, I find myself more able to appreciate the people, events, and situations that have been part of my life history"* (Item 5). The item that generated the highest mean was *"When I look at the world, I don't see much to be grateful for"* (Item 3), at both time points. Finally, for every item and for both time points, the percentage of the students who agreed (i.e., at least 36.4%) was higher than the percentage of those who disagreed.

To conclude, at both time points, the item that yielded the lowest mean was *"As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history"* (Item 5). Besides, the item that generated the highest mean was *"When I look at the world, I don't see much to be grateful for"* (Item 3). Based on these results, and even though students did not understand the reversed items, I conclude that participants were more grateful than ungrateful with their lives.

Table 10

Descriptive Statistics for all Items on the Gratitude Questionnaire-six Item Form (GQ-6) (1-7)[a]

Item Number	Item	% Disagreeing	% Neutral	% Agreeing	*M*	*SD*
1	I have so much in life to be thankful for	3.7 (2.9)	5.1 (3.9)	91.2 (93.2)	6.30 (6.35)	1.17 (1.07)
2	If I had to list everything that I felt grateful for, it would be a very long list	8.0 (5.5)	12.5 (13.5)	79.5 (81.0)	5.84 (5.87)	1.55 (1.37)
3	When I look at the world, I don't see much to be grateful for (reversed item)	2.6 (2.9)	4.2 (3.9)	93.2 (93.2)	6.38 (6.35)	1.05 (1.07)

4	I am grateful to a wide variety of people	6.4 (5.5)	13.2 (13.5)	80.4 (81.0)	5.91 (5.87)	1.46 (1.37)
5	As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history	31.8 (15.8)	0.0 (16.4)	68.2 (67.8)	4.35 (5.33)	1.73 (1.85)
6	Long amounts of time can go by before I feel grateful to something or someone (reversed item)	2.6 (3.9)	6.1 (8.0)	91.3 (88.1)	6.20 (6.09)	1.08 (1.20)

[a] The numbers that are not in parentheses represent Time 1 and the numbers that are in parentheses represent Time 2

In relation to the Factor Differentiation of Emotional Experience Subscale (see Table 11), it is interesting to highlight that, for every item and for both time points, the percentage of the students who agreed (i.e., at least 30.2%) was higher than was the percentage of those who disagreed. The following item generated the most disagreement and the lowest mean at both time points: *"I tend to draw fine distinctions between similar feelings"* (Item 3). The item that generated the most agreement at both time points and the highest mean at T1 was *"I am aware that each emotion has a completely different meaning"* (Item 4). Besides, the item that generated the highest mean at T2 was *"Each emotion has a very distinct and unique meaning to me"* (Item 2) at T2. Finally, and based on these results, it is clear that the participants can easily differentiate their emotions.

Table 11

Descriptive Statistics for all Items on the Factor Differentiation of Emotional Experience [a]

Item Number	Item	% Disagreeing	% Neutral	% Agreeing	*M*	*SD*
1	I am aware of the different nuances or subtleties of a given emotion	6.8 (3.9)	10.9 (16.7)	82.3 (79.4)	3.93 (3.91)	0.80 (0.72)
2	Each emotion has a very distinct and unique meaning to me	2.3 (1.3)	11.9 (12.9)	85.9 (85.9)	4.24 (4.19)	0.76 (0.72)

3	I tend to draw fine distinctions between similar feelings	22.2 (19.0)	25.4 (23.8)	52.4 (57.2)	3.38 (3.51)	1.07 (1.09)
4	I am aware that each emotion has a completely different meaning	2.3 (3.2)	6.1 (10.6)	91.6 (86.2)	4.30 (4.17)	0.70 (0.76)
5	If emotions are viewed as colors, I can notice even small variations within one kind of color (emotion)	10.9 (10.3)	23.8 (24.1)	65.3 (81.0)	3.73 (3.71)	0.98 (0.91)
6	I am aware of the subtle differences between feelings I have	6.4 (4.2)	13.2 (14.18)	80.4 (81.0)	3.94 (3.95)	0.80 (0.70)
7	I am good at distinguishing subtle differences in the meaning of closely related emotion words	4.5 (4.8)	22.2 (21.9)	73.3 (73.3)	3.87 (3.86)	0.78 (0.79)

[a] The numbers that are not in parentheses represent Time 1 and the numbers that are in parentheses represent Time 2

The following item from Depression, Anxiety and Stress Scale (see Table 12) that generated the most disagreement at both time points was *"I felt that life was meaningless"* (Item 21). The items that generated the most agreement at both time points were *"I felt that I was using a lot of nervous energy"* (Item 8) and *"I was aware of dryness of my mouth"* (Item 2). To conclude, at both time points, the item that yielded the lowest mean was *"I felt I was close to panic"* (Item 15). Besides, the item that generated the highest mean was "I felt that I was using a lot of nervous energy" (Item 8) at T1 and *"I was aware of dryness of my mouth"* (Item 2) at T2.

Table 12

Descriptive Statistics for all Items on the Depression, Anxiety and Stress Scale-21 (1-4)[a]

Item Number	Item	% Disagreeing	% Agreeing	*M*	*SD*
1	I found it hard to wind down	25.7 (31.5)	74.3 (68.5)	2.12 (2.01)	0.90 (0.90)
2	I was aware of dryness of my mouth	20.3 (18.3)	79.7 (81.7)	2.37 (2.47)	0.99 (1.02)

3	I couldn't seem to experience any positive feeling at all	50.5 (52.4)	49.5 (47.6)	1.68 (1.67)	0.83 (0.84)
4	I experienced breathing difficulty (*e.g.*, excessively rapid breathing, breathlessness in the absence of physical exertion)	49.2 (46.6)	50.8 (53.4)	1.70 (1.77)	0.82 (0.88)
5	I found it difficult to work up the initiative to do things	33.8 (23.5)	66.2 (76.5)	2.05 (2.17)	0.98 (0.91)
6	I tended to over-react to situations	28.0 (32.8)	72.0 (67.2)	2.02 (1.99)	0.87 (0.89)
7	I experienced trembling (*e.g.*, in the hands)	47.9 (46.3)	52.1 (53.7)	1.81 (1.81)	0.94 (0.94)
8	I felt that I was using a lot of nervous energy	16.7 (18.6)	83.3 (81.4)	2.38 (2.31)	0.97 (0.92)
9	I was worried about situations in which I might panic and make a fool of myself	36.3 (41.8)	63.7 (58.2)	2.09 (2.04)	1.06 (1.09)
10	I felt that I had nothing to look forward to	41.8 (46.3)	58.2 (53.7)	1.84 (1.82)	0.90 (0.93)
11	I found myself getting agitated	25.1 (27.3)	74.9 (72.7)	2.10 (2.05)	0.88 (0.86)
12	I found it difficult to relax	27.0 (28.6)	73.0 (71.4)	2.21 (2.08)	0.99 (0.94)
13	I felt down-hearted and blue	28.0 (23.8)	72.0 (76.2)	2.01 (2.08)	0.84 (0.84)
14	I was intolerant of anything that kept me from getting on with what I was doing	41.5 (40.2)	58.5 (59.8)	1.82 (1.87)	0.84 (0.88)
15	I felt I was close to panic	61.1 (58.2)	38.9 (41.8)	1.60 (1.60)	0.90 (0.84)
16	I was unable to become enthusiastic about anything	56.3 (51.8)	43.7 (48.2)	1.62 (1.69)	0.84 (0.87)
17	I felt I wasn't worth much as a person	60.1 (56.9)	39.9 (43.1)	1.61 (1.69)	0.90 (0.93)
18	I felt that I was rather touchy	44.1 (37.3)	55.9 (62.7)	1.81 (1.87)	0.89 (0.84)
19	I was aware of the action of my heart in the absence of physical exertion (*e.g.*, sense of heart rate increase, heart missing a beat)	42.1 (34.7)	57.9 (65.3)	1.90 (2.03)	0.96 (0.98)
20	I felt scared without any good reason	50.5 (51.4)	49.5 (48.6)	1.74 (1.75)	0.91 (0.93)

21	I felt that life was meaningless	63.0 (62.7)	37.0 (37.3)	1.58 (1.57)	0.90 (0.88)

[a] The numbers that are not in parentheses represent Time 1 and the numbers that are in parentheses represent Time 2

In relation to the Academic Self-efficacy Inventory (see Table 13), it is interesting to highlight that, for every item and for both time points, the percentage of the students who agreed (i.e., at least 33.4%) was higher than was the percentage of those who disagreed. The following item generated the most disagreement: *"I organize my time to comply with everything the teachers ask"* (Item 4). Besides, the items that generated the most agreement at both time points were *"I perform any task or work that teachers give, even if they are challenging"* (Item 3) and "*I provide useful ideas to do my homework in all my classes"* (Item 2). To conclude, the item that yielded the lowest mean was *"I express my opinion, even if I disagree with what the teacher says"* (Item 6) at T1 and *"I organize my time to comply with everything the teachers ask"* (Item 4) at T2. Finally, at both time points, the item that generated the highest mean was *"I perform any task or work that teachers give, even if they are challenging"* (Item 3).

Table 13

Descriptive Statistics for all Items on the Academic Self-efficacy Inventory (1-5)[a]

Item Number	Item	% Disagreeing	% Neutral	% Agreeing	*M*	*SD*
1	I work on any task and achieve good grades	7.4 (4.2)	19.3 (15.1)	73.3 (80.7)	3.77 (3.88)	0.74 (0.68)
2	I provide useful ideas to do my homework in all my classes	5.1 (6.1)	13.8 (11.3)	81.0 (82.6)	3.95 (3.94)	0.76 (0.77)
3	I perform any task or work that teachers give, even if they are challenging	4.8 (4.5)	13.5 (12.9)	81.7 (82.6)	3.95 (3.99)	0.73 (0.73)
4	I organize my time to comply with everything the teachers ask	26.4 (24.1)	13.8 (16.4)	59.8 (59.5)	3.45 (3.47)	1.11 (1.10)
5	I study for more hours when I have difficult tests	18.6 (16.7)	12.5 (15.1)	68.8 (68.2)	3.68 (3.68)	1.06 (1.03)

6	I express my opinion, even if I disagree with what the teacher says	23.5 (19.6)	19.0 (20.3)	57.6 (60.1)	3.41 (3.53)	1.14 (1.18)

[a] The numbers that are not in parentheses represent Time 1 and the numbers that are in parentheses represent Time 2

The following section addresses a description of the analysis of each of the hypotheses of the current study.

4.3. Research Hypotheses Analysis

Hypothesis 1. Students' levels of Harmonious Passion (HP) and Obsessive Passion (OP) for academics, as well as students' Perceived Academic Control (PAC) at T2, mediate the relationship between Intrinsic Motivation (IM) at Time 1 and academic self-efficacy (ASE) at T2. Therefore, high levels of IM at T1 are associated with higher levels of HP and PAC at T2 and, in turn, with higher levels of ASE at T2. Then, low levels of IM at T1 are associated with higher levels of OP at T2 and, in turn, with lower levels of ASE at T2. (See Figure 2 and Table 14.)

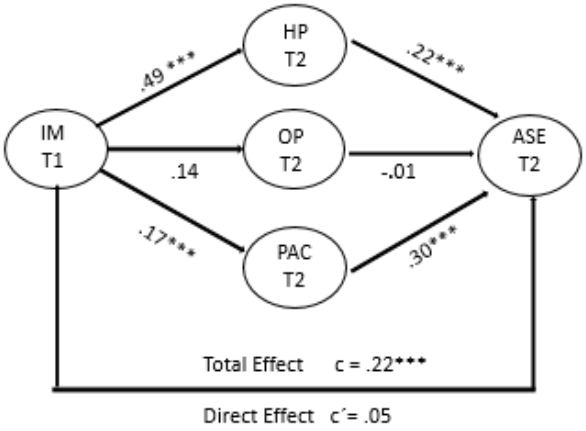
From the final sample size of my study, 311 complete responses in Phase 1 and Phase 2, each respondent was surveyed about their levels of IM at T1, HP and OP at T2, PAC at T2, and Academic Self-efficacy at T2. I conceptualized HP, OP, and PAC at T2 as potential mediators (M) of the effect of IM (X) at T1 on ASE (Y) at T2. I tested whether the mediators were caused by IM (the independent variable) and whether they were a cause of ASE (the dependent variable). To confirm the mediators and their statistical significance in the model, I analysed whether X lost its statistical significance when the mediators were included in the model. I followed four Steps: Step 1, $X \rightarrow Y$; Step 2, $X \rightarrow M$; Step 3, $M|X \rightarrow Y$; and Step 4, $X|M \rightarrow Y$.

I tested a parallel multiple mediator model in which X influenced Y directly and indirectly through three mediators, and I concluded that students' IM at T1 was strong and statistically significantly and positively related to students' levels of HP at T2 ($r = .49$, $p < .001$). For example, 93.9% of the students agreed on *"I believe this activity could be of some value to*

me" and 85.2% of them claimed that *"The new things that I discover with this activity allow me to appreciate it even more"* (See Table 7, Item 7). IM at T1 also was statistically significantly and positively associated with students' levels of PAC at T2. For instance, 96.8% highlighted that *"It was important to me to do well at this task"* (see Table 7) and 84.2% claimed that the more effort they put into their courses, the better I did in them (see Table 8, Item 6), but this correlation coefficient was weak ($r = .17$, $p < .001$). Finally, students' IM at T1 was small and not statistically significantly related to OP at T2 ($r = .14$, $p = .24$) (Step 2, X → M). Although IM (the independent variable) was a statistically significant predictor for ASE (the dependent variable), as well as for two of the three mediator variables, HP and PAC, the direct effect was no longer statistically significant in the presence of these mediator variables ($C' = .05$, $p = .32$) (Step 1, X → Y). Students' levels of HP at T2 were weak but statistically significantly and positively related to students' levels of ASE at T2 ($r = .22$, $p < .00001$). Students' levels of PAC at T2 were moderate and statistically significantly and positively related to students' ASE at T2 ($r = .30$, $p < .00001$). Thus, this is in line with the results of the items of the questionnaires that generated the most agreement. For example, 91.3% of the participants believed that they were responsible for their performance (see Table 8, Item 4) and 82.6% on being able to perform any task or work that teachers gave, even if they were challenging (see Table 13, Item 3). However, students' levels of OP at T2 were weak and not statistically significantly and negatively related to students' ASE at T2 ($r = -.01$, $p = .94$) (Step 3, M|X → Y). Figure 2 shows the pathways that I analysed.

Figure 2

Parallel multiple mediator: Harmonious Passion and Perceived Academic Control mediate the relationship between Intrinsic Motivation and Academic Self-efficacy.



Mediation analysis is undertaken when it "is successfully demonstrated that X and Y are associated" (Hayes, 2013, p. 87) and it occurs when the indirect effect contributes to the model estimation, which means that the confidence intervals of the indirect effects do not contain zero. If this is the case, then the mediator of the model serves as the mediator of the effect of X on Y. The 95% confidence intervals of the indirect effects through IM (X) on ASE (Y) are displayed in Table 14 (Step 4, X|M → Y). The 95% confidence interval pertaining to both the indirect effect of IM on ASE through HP and the indirect effect of IM on ASE through PAC did not contain zero. Therefore, I inferred that these two indirect effects were statistically significantly different from zero. However, 95% confidence interval for the indirect effect of IM on ASE via OP did contain zero; therefore, I inferred that the indirect effect was not statistically significant. To conclude, I found that HP and PAC at T2 mediated the relationship between IM at T1 and ASE at T2, but OP at T2 did not.

Table 14

Completely Standardized Indirect Effects Through IM and ASE

IV	DV	Mediator	β	BootSE	BootLLCI Lower 95%	BootULCI Upper 95%
IM (T1)	ASE (T2)	HP (T2)	.10	.024	.058	.15
IM (T1)	ASE (T2)	OP (T2)	-.01	.005	-.013	.010

IM (T1)	ASE (T2)	PAC (T2)	.05	.019	.015	.092

Note. Independent Variable = IV; Dependent Variable = DV; Intrinsic Motivation = IM; Academic Self-efficacy Inventory = ASE; Harmonious Passion = HP; Obsessive Passion = OP; Perceived Academic Control (PAC).

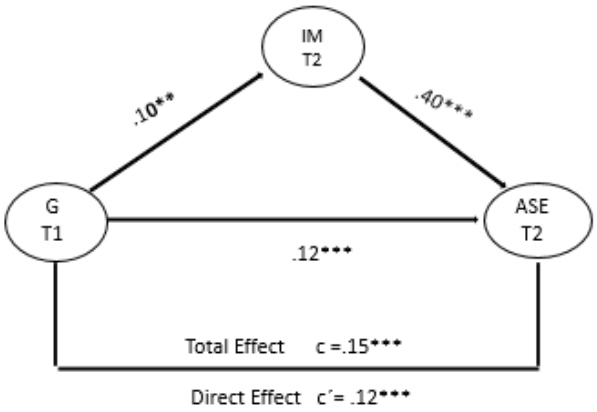
Hypothesis 2. The relationship between Gratitude at T1 and Academic Self-efficacy (ASE) at T2 is mediated by Intrinsic Motivation (IM) at T2; therefore, high levels of Gratitude at T1 are associated with higher levels of IM at T2 and, in turn, with higher levels of ASE at T2. (See Figure 3 and Table 15.)

I analysed a simple mediation model that included only one mediator variable, IM, with two pathways by which a specific X variable (Gratitude, the independent variable) was proposed as influencing Y (ASE, the dependent variable). I concluded that students' Gratitude at T1 was small and statistically significantly and positively related to students' levels of IM at T2 ($r = .10$, $p < .01$) (Step 2, X → M). Gratitude, the independent variable, was a small and statistically significantly predictor for ASE, the dependent variable ($C' = .12$, $p < .001$) (Step 1, X → Y), and the total effect remained statistically significant but the correlation coefficient was low ($C = .15$, $p = .001$). Students' levels of IM at T2 were moderate and statistically significantly and positively related to students' levels of ASE at T2 ($r = .40$, $p < .00001$) (Step 3, M|X → Y). Thus, it was found that the mediator, IM, was statistically significant in the model and that the independent variable, Gratitude, did not lose its statistical significance when IM was included in the model. For example, among the items that generated the most agreement, participants claimed that *"I believe this activity could be of some value to me"* (91.3% at T2, see Table 7, Item 7), which relates to *"I have so much in life to be thankful for"* (91.2% at T1, see Table 10, Item 1). Thus, the result of this analysis also might explain why Gratitude is a statistically significantly

predictor for ASE because 80.7% of the participants responded that *"I work on any task and achieve good grades"* at T2 (see Table 13, Item 1). Figure 3 shows the pathways that I analysed.

Figure 3

Simple mediation: Intrinsic Motivation mediates the relationship between Gratitude and Academic Self-efficacy.



When introducing IM, it can be observed that there was also a statistically significant indirect effect (95% *CI* = .026, .122) because the confidence interval did not contain a zero. Thus, we can interpret that IM at T2 mediated the relationship between Gratitude and ASE at T2. The 95% confidence intervals of the indirect effects through Gratitude (X) on ASE (Y) are displayed in Table 15 (Step 4, X|M → Y).

Table 15

Completely Standardized Indirect Effects Through Gratitude and ASE

IV	DV	Mediator	β	BootSE	BootLLCI Lower 95%	BootULCI Upper 95%
G (T1)	ASE (T2)	IM (T2)	.06	.02	.026	.1142

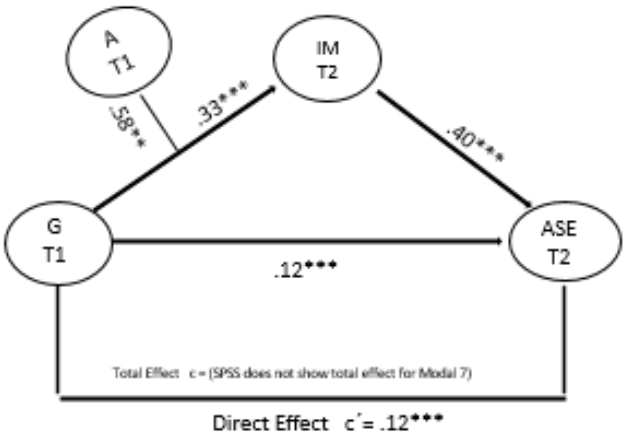
Note. Independent Variable = IV; Dependent Variable = DV; Gratitude = G; Academic Self-efficacy Inventory = ASE; Intrinsic Motivation = IM.

Hypothesis 3. The indirect effect of Gratitude at T1 on students' Academic Self-efficacy at T2 through students' IM at T2 is moderated by anxiety at T1; therefore, it is expected that the moderated mediation effect is statistically significant. (See Figure 4 and Table 16, Table 17, and Table 18.)

According to Edwards and Lambert (2007), "a moderated mediation means that either or both of the paths from X to M and from M to Y, which constitute the indirect effect of X on Y, vary across levels of the moderator" (p. 6). (See Figure 4.) Thus, a method to test a moderated mediation model focuses on the concept of mediation depending on the levels of a moderator variable (Edwards & Lambert, 2007, as cited in Laurence, Fried, & Slowik, 2013). I included the same variables used in Hypothesis 2, but I added another variable as the moderator of the indirect effect of X on Y through M, Anxiety at T1 (W) (see Figure 4); this new path affected the relation between students' Gratitude at T1 and students' IM at T2. Consequently, this time, students' Gratitude at T1 was moderate (not as low as it was in Hypothesis 2) and statistically significantly and positively related to students' levels of IM at T2 ($r = .33$, $p < .001$), as well as students' levels of Anxiety at T1 ($r = .58$, $p < .01$), whose correlation coefficient was strong. Figure 4 shows the pathways that I analysed.

Figure 4

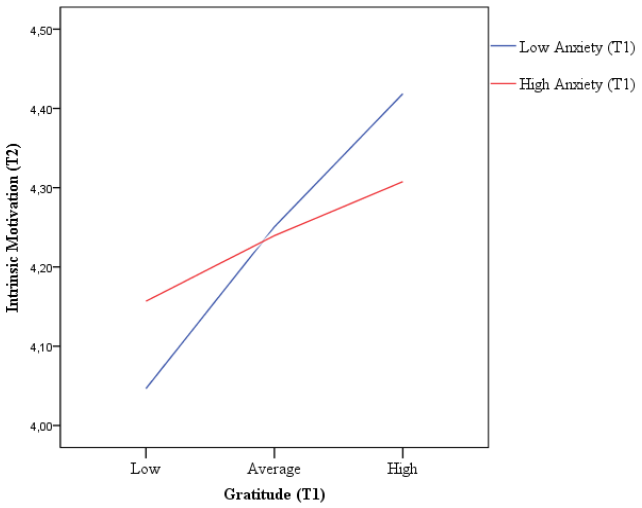
Moderated mediation model: Anxiety (W) has a nonzero weight in the function linking the indirect effect of Gratitude (X) on Academic Self-efficacy (Y) through intrinsic motivation, to the moderator.



The interaction between Gratitude at T1 and Anxiety at T1 was negatively statistically significant (r = -.10, $p < .01$), albeit small (see Table 16). Students with low levels of Anxiety (T1) and low levels of Gratitude (T1) manifested low levels of IM (T2), compared to those with high levels of Anxiety (T1). Besides, students with low levels of Anxiety (T1) and high levels of Gratitude (T1) presented higher levels of IM (T2) compared to those with high levels of Anxiety (T1). For example, those who claimed *"I believe doing this activity could be beneficial"* (90.7% at T2, see Table 7, Item 8), also agreed on *"I have so much in life to be thankful for"* (91.2% at T1, see Table 10, Item 1). Then, I observed that 61.1% of these students disagreed on *"I felt I was close to panic"* at T1 (see Table 12, Item 15). Thus, higher levels of IM (T2), as well as higher levels of Gratitude (T1), were observed in students who also presented lower levels of anxiety than in those who were more anxious (see Figure 5). Finally, in the case of students experiencing low levels of Anxiety (T1), the slope was steeper than for those experiencing high levels of Anxiety (T1).

Figure 5

Interaction between Gratitude and Anxiety.



The effect of X (Gratitude at T1, the independent variable) on Y (ASE at T2, the dependent variable), through the mediator M (IM at T2, the indirect effect) changed due to the levels of W (Anxiety at T1 the moderator). (See Table 16, Table 17, and Table 18.) I concluded that Anxiety at T1 (W) influenced the strength of the indirect effect of Gratitude at T1 on ASE at T2, through IM at T2, and the moderated mediation effect was statistically significant. The *conditional effect* of Gratitude at T1 on Intrinsic Motivation (IM) at T2 with Anxiety at T1 as the moderator was more influential among students experiencing less Anxiety ($r = .20$, $p < .001$) than among those experiencing greater Anxiety ($r = .08$, $p < .01$). (See Table 17.) The *conditional indirect effect* of Gratitude (X) on ASE (Y) through IM (M) was statistically different from zero at the different levels of the moderator (W) because the confidence interval did not contain a zero (see Table 18). In conclusion, the *index of moderated mediation*, which is a quantification of the association between the indirect effect and the moderator, showed that this index was different from zero (see Table 18) (Hayes, 2015, p. 2). Thus, the mediation is moderated because the moderator W, Anxiety at T1, had a nonzero weight in the function linking the indirect effect of Gratitude at T1 (X) on ASE at T2 (Y) through IM at T2 (M) to the moderator Anxiety at T1. In

other words, the mediation is moderated because the confidence interval did not contain a zero (95% *CI* = [-.081, -.014]). (See Table 18.)

Table 16

Intrinsic Motivation (IM) at T2: A Dependent Variable Model				
IM = as DV	β	SE	LLCI Lower 95%	ULCI Upper 95%
Gratitude (T1)	.33***	.09	.160	.509
Anxiety (T1)	.58**	.20	.178	.978
Gratitude x Anxiety (Int_1)	-.10**	.04	-.177	-.030

*Note. *p < .05, **p < .01, ***p < .001*

Table 17

Conditional Effect of the Focal Predictor Gratitude (G) at T1 on Intrinsic Motivation (IM) at T2 with Anxiety as the Moderator

Conditional effect of G over IM at values of the moderator	β	SE	LLCI Lower 95%	ULCI Upper 95%
-1 SD Anxiety (T1)	.20***	.05	.109	.293
Mean Anxiety (T1)	.16***	.04	.085	.228
+1 SD Anxiety (T1)	.08*	.03	.019	.143

*Note. *p < .05, **p < .01, ***p < .001*

Table 18

Conditional Indirect Effect of Gratitude (G) at T1 on Academic Self-efficacy (ASE) at T2, and Index of Moderated mediation for Anxiety (ANX) at T1

Conditional indirect effect of Gratitude T1 on ASE T2	β	BootSE	BootLLCI Lower 95%	BootULCI Upper 95%
-1 SD Anxiety (T1)	.08	.02	.041	.140
Mean Anxiety (T1)	.06	.02	.031	.108

+1 SD Anxiety (T1)	.03	.01	.007	.065
Index of moderated mediation for ANX T1	β	BootSE	BootLLCI Lower 95%	BootULCI Upper 95%
Anxiety (T1)	-.04	.01	-.081	-.014

Hypothesis 4. The relationship among Stress, Anxiety, and Depression (SAD) at T1 and Academic Self-efficacy (ASE) at T2 is mediated by Perceived Academic Control (PAC) at T2. Therefore, high levels of SAD at T1 are associated with lower levels of PAC at T2 and, in turn, with lower levels of ASE at T2. Then, the relationship between SAD at T1, and ASE at T2 is mediated by Gratitude at T2; therefore, high levels of SAD at T1 are associated with lower levels of Gratitude at T2 and, in turn, with lower levels of ASE at T2. (See Figure 6 and Table 19.)

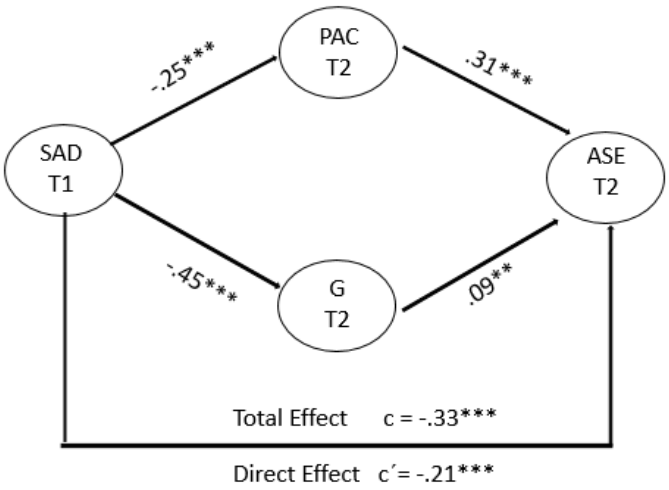
I tested a parallel multiple mediator model in which SAD (the independent variable: X) at T1 influenced ASE (the dependent variable: Y) at T2 directly and indirectly through PAC at T2 and Gratitude at T2, the two mediators of the model. I tested whether the mediators were caused by SAD and whether they were a cause of ASE. Therefore, I analysed whether SAD lost its statistical significance when the mediators were included in the model. I concluded that students' levels of SAD at T1 were small-to-moderate and statistically significant and negatively related to students' PAC at T2 (r = -.25, p < .00001) and students' levels of SAD at T1 were moderate-to-strong and statistically significant and negatively associated with students' levels of Gratitude at T2 (r = -.45, p < .00001) (Step 2, X → M). Thus, SAD at T1 (the independent variable) was not only a statistically significant and negatively predictor for both mediators, PAC and Gratitude, but also for ASE at T2 (the dependent variable) (C' = -.21, p < .001) (Step 1, X → Y). In other words, when the levels of SAD increased, the levels of PAC and Gratitude decreased, and vice versa. For example, the more participants agreed on *"I found it hard to wind down"* (74.3% at T1, see Table 12, Item 1), the fewer they decided on, "*The more effort I put into my courses, the*

better I do in them" (5.8% at T2, see Table 8, Item 2). Besides, the greater the levels of SAD, fewer students agreed on *"As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history"* (15.8% at T2, see Table 10, Item 5).

Students' levels of PAC at T2 were moderate and statistically significant and positively related to students' levels of ASE at T2 ($r = .31$, $p < .00001$) and their levels of Gratitude at T2 were small but statistically significant and positively related to students' ASE at T2 ($r = .09$, $p < .01$) (Step 3, M|X → Y). For example, among the items that generated the most agreement, students claimed: *"I see myself as largely responsible for my performance throughout my college career"* (91.3% at T2, see Table 8, Item 4) and *"I am grateful to a wide variety of people"* (81.0% at T2, see Table 10, Item 4). These emotions relate to high levels of agreement on *"I provide useful ideas to do my homework in all my classes"* (82.6% at T2, see Table 13, Item 2). Figure 6 shows the pathways that I analysed.

Figure 6

Parallel multiple mediators: Perceived academic control and Gratitude, mediate the relationship between stress, Anxiety, and depression and Academic Self-efficacy.



As I mentioned previously, mediation effects occur when the confidence intervals of the indirect effects do not contain zero. The 95% confidence intervals of the indirect effects through SAD (X) on ASE (Y) are displayed in Table 19 (Step 4, X|M → Y). The indirect effect of SAD on ASE through PAC as well as the indirect effect of SAD on ASE through Gratitude do not contain zero. Therefore, these indirect effects are different from zero. To conclude, I found that PAC and Gratitude at T2 mediated the relationship between SAD at T1 and ASE at T2.

Table 19

Completely Standardized Indirect Effects through Stress, Anxiety, and Depression (SAD), and Academic Self-efficacy (ASE)

IV	DV	Mediator	β	BootSE	BootLLCI Lower 95%	BootULCI Upper 95%
SAD (T1)	ASE (T2)	PAC T2	-.07	.02	-.124	-.036
SAD (T1)	ASE (T2)	G T2	-.04	.02	-.095	-.003

Note. Independent Variable = IV; Dependent Variable = DV; Stress, Anxiety, and Depression = SAD; Academic Self-efficacy Inventory = ASE; Perceived Academic Control = PAC; Gratitude = G.

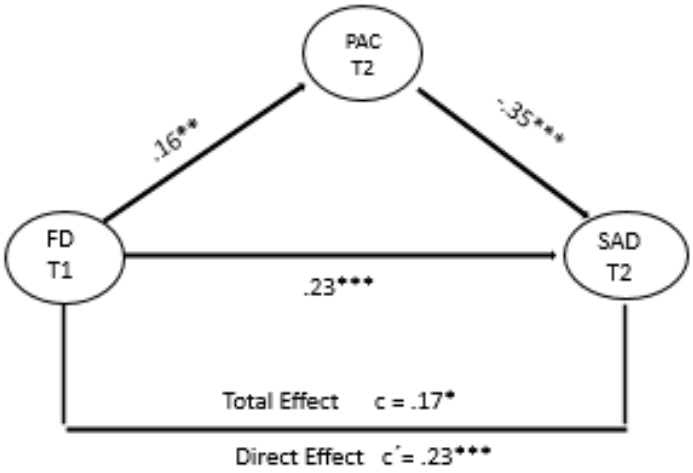
Hypothesis 5. The relationship between Factor Differentiation (FD) at T1 and Stress, Anxiety, and Depression (SAD) at T2 is mediated by Perceived Academic Control (PAC) at T2; therefore, high levels of FD at T1 are associated with higher levels of PAC at T2 and with lower levels of SAD at T2. (See Figure 7 and Table 20.)

I analysed a simple mediation model that included only one mediator variable, which was Perceived Academic Control (PAC) at T2. It included two pathways by which a specific independent variable, which was Factor Differentiation (FD) at T1, was proposed as influencing a dependent variable, Stress, Anxiety, and Depression (SAD) at T2. To confirm the mediator and the statistical significance in the model, I analysed whether FD lost its significance when PAC

was included in the model. I concluded that students' FD at T1 was statistically significantly and positively related to students' levels of PAC at T2, but the correlation coefficient was weak (r = .16, p < .01) (Step 2, X → M). FD, the independent variable, was a statistically significant predictor for SAD (the dependent variable), but the correlation coefficient was low (C' = .23, p = .001) (Step 1, X → Y), and the total effect remained statistically significant but the correlation coefficient was small (C = .17, p = .01). Finally, students' levels of PAC at T2 were moderate and statistically significantly and negatively related to students' SAD at T2 (r = -.35, p < .001) (Step 3, M|X → Y). Thus, it was found that the mediator, PAC, was statistically significant in the model and that the independent variable, FD, did not lose its statistical significance when PAC was included in the model. Figure 7 shows the pathways that I analysed.

Figure 7

Simple mediation: Perceived Academic Control mediates the relationship between Factor Differentiation and stress, Anxiety, and depression.



The following examples can illustrate the analysis of this simple mediation model. Students who claimed *"I am aware that each emotion has a completely different meaning"* (91.6% at T1, see Table 11, Item 4) also agreed on *"I see myself as largely responsible for my*

performance throughout my college career" (91.3% at T2, see Table 8, Item 4). According to Barrett et al. (2001), students need to use their emotional differentiation abilities, especially when they experience greater levels of stress and anxiety. For example, 82.3% of the participants found it essential to be able to become aware of the different nuances or subtleties of a given emotion because it can help them regulate their nervous energy (81.4% at T2, see Table 11, Item 1). Finally, when the levels of PAC decreased, the levels of SAD increased. For example, when students believed that things beyond their control determined their grades (73.6% at T2, see Table 8, Item 8), the higher they scored on *"I found it difficult to relax"* (71.4% at T2, see Table 12, Item 2).

Mediation analysis is undertaken when the indirect effect contributes to the model estimation. The confidence intervals of the indirect effect did not contain zero in other words, the indirect effect of FD (X) on SAD (Y) through PAC (M) falls between the lower and the upper bound (95% *CI* = [-.089, -.012]). Therefore, the mediator of the model serves as the mediator of the effect of X on Y (Step 4, X|M → Y) (see Table 20).

Table 20

Completely Standardized Indirect Effects through Factor Differentiation (FD) and Stress, Anxiety, and Depression (SAD)

IV	DV	Mediator	β	BootSE	BootLLCI Lower 95%	BootULCI Upper 95%
FD (T1)	SAD (T2)	PAC (T2)	-.05	.02	-.089	-.012

Note. Independent Variable = IV; Dependent Variable = DV; Factor Differentiation = FD; Stress, Anxiety, and Depression = SAD; Perceived Academic Control (PAC).

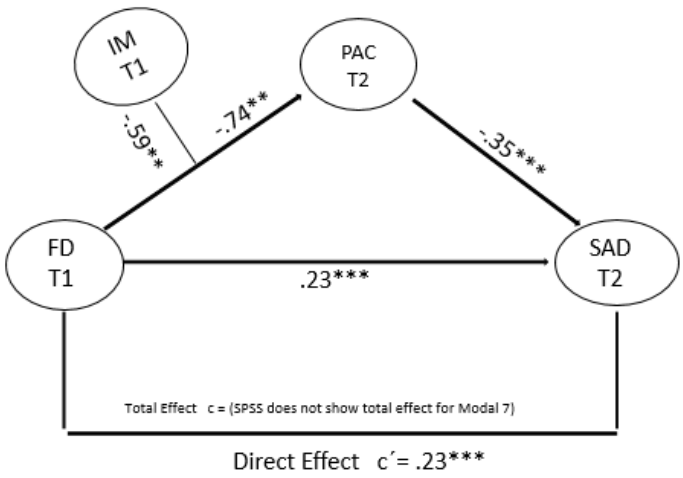
Hypothesis 6. The indirect effect of Factor Differentiation (FD) at T1 on students' Stress, Anxiety, and Depression (SAD) at T2, through students' Perceived Academic Control (PAC) at

T2, is moderated by Intrinsic Motivation (IM) at T1; therefore, it is expected that the moderated mediation effect is statistically significant. (See Figure 8 and Table 21, Table 22, and Table 23.)

The strength of the mediation was contingent upon the moderating effect of the moderator variable, which I tested using a moderated mediation analysis. I included the same variables used in Hypothesis 5, but I treated IM at T1 as the moderator of the indirect effect, which is depicted in Figure 8. The new path influenced the relation between Factor Differentiation (X) at Time 1 and PAC (M) at Time 2. Consequently, this time, students' levels of FD at T1 were statistically significantly strong (not small as it was in Hypothesis 5; $r = .16$, $p < .01$) and negatively related to students' levels of PAC at T2 ($r = -.74$, $p < .01$), as well as IM at T1 ($r = -.59$, $p < .01$). Figure 8 shows the pathways that I analysed.

Figure 8

Moderated mediation model: Intrinsic Motivation (W) has a nonzero weight in the function linking the indirect effect of Factor Differentiation (X) on Stress, Anxiety, and Depression (Y) through Perceived Academic Control (M), to the moderator.

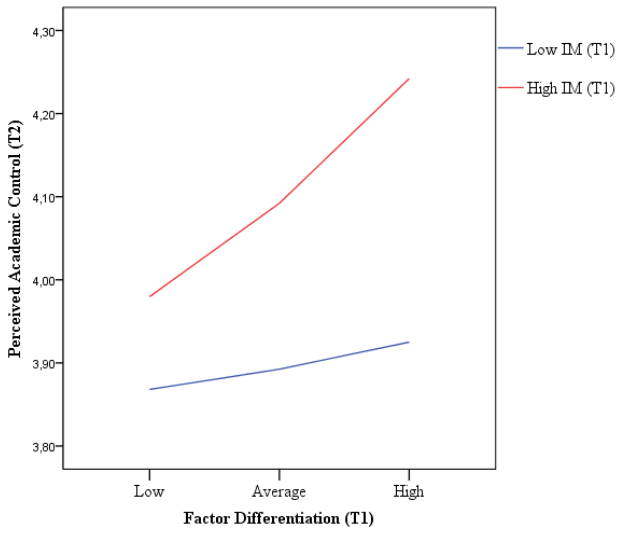


The interaction between FD at T1 and IM at T1 was positively and statistically significant ($r = .20$, $p < .001$) (see Table 21). Students who were low in IM (T1) and low in FD (T1) showed lower levels of PAC (T2) as well, compared to those with high levels of IM (T1). Besides,

students with high levels of IM (T1) and high levels of FD (T1) presented higher levels of PAC (T2), compared to those with low levels of IM (T1). For example, those who generated strong agreement on *"I would describe this activity as very interesting"* (82.3% at T1, see Table 7, Item 3), also did on *"Each emotion has a very distinct and unique meaning to me"* (85.9% at T1, see Tale 11, Item 2). Then, I observed that these students also agreed on *"The more effort I put into my courses, the better I do in them"* (84.2% at T2, see Table 8, Item 2). Thus, higher levels of PAC (T2), as well as higher levels of FD (T1), are observed in students who presented higher levels of IM (T1) than in those who are less IM. In the case of students who presented high levels of IM (T1), the slope is considerably steeper than for those who presented lower levels of IM (T1), as students' levels of FD (T1) and PAC (T2) increased (see Figure 9).

Figure 9

Interaction between Factor Differentiation and Intrinsic Motivation.



The effect of X (FD at T1, the independent variable) on Y (SAD at T2, the dependent variable), through the mediator M (PAC at T2, the indirect effect) changed due to the levels of W (IM at T1, the moderator) (see Table 21, Table 22, and Table 23). I concluded that Intrinsic Motivation (W) at T1 influenced the strength of the indirect effect of Factor Differentiation (X) at

T1 on Stress, Anxiety, and Depression (Y) at T2, through Perceived Academic Control (M) at T2, and the moderated mediation effect was statistically significant. The *conditional effect* of the FD (X) at T1 on PAC (M) at T2 with IM as the moderator at T1 was more influential among students experiencing more IM (r = .26, p < .001) than among those experiencing less IM (r = .05, p = .33) (see table 22). I concluded that it was statistically different from zero only at higher levels of the moderator. However, it was not statistically different from zero at lower levels of the moderator (see Table 22).

I estimated the difference between the *conditional indirect effects* of FD at T1 on SAD at T2 through PAC at T2 at the two values of the moderator IM at T1. I concluded that it was statistically different from zero only at higher levels of the moderator. However, it was not statistically different from zero at lower levels of the moderator (see Table 23). Finally, the *index of moderated mediation*, which is a quantification of the association between the indirect effect and the moderator, showed that this index was different from zero (Hayes, 2015, p.2). Thus, the mediation is moderated because the moderator has a nonzero weight in the function linking the indirect effect of FD at T1 (X) on SAD at T2 (Y) through PAC at T2 (M) to IM at T1 (W) because the confidence interval did not contain a zero (95% *CI* = -.125, -.007) (see Table 23).

Table 21

Perceived Academic Control (PAC) at T2: A Dependent Variable Model

PAC = as DV	β	SE	LLCI Lower 95%	ULCI Upper 95%
Factor Differentiation (T1)	-.74**	.23	-1.194	-.290
Intrinsic Motivation (T1)	-.59**	.19	-.984	-.201
FD x IM (Int_1)	.20***	.05	.099	.311

*Note. *p < .05, **p < .01, ***p < .001*

Table 22

Conditional Effect of the Focal Predictor Factor Differentiation (FD) at T1 on Perceived Academic Control (PAC) at T2 at Values of Intrinsic Motivation (IM) at T1 as the Moderator

Conditional effect of FD (T1) over PAC (T2) at values of the moderator IM (T1)	β	SE	LLCI Lower 95%	ULCI Upper 95%
-1 SD IM T1	.05	.05	-.057	.171
Mean IM T1	.15*	.05	.034	.261
+1 SD IM T1	.26***	.07	.125	.399

*Note. *p < .05, **p < .01, ***p < .001*

Table 23

Conditional Indirect Effect of Factor Differentiation (FD) T1 on Stress, Anxiety, and Depression (SAD) T2, and Index of Moderated Mediation for Perceived Academic Control (PAC) at T2

Conditional indirect effect of FD T1 on SAD T2	β	BootSE	BootLLCI Lower 95%	BootULCI Upper 95%
-1 SD IM T1	-.02	.02	-.069	.028
Mean IM T1	-.05	.02	-.099	-.009
+1 SD IM T1	-09	.03	-.153	-.036
Index of moderated mediation for PAC T2	β	BootSE	BootLLCI Lower 95%	BootULCI Upper 95%
IM T1	-.07	.02	-.125	-.007

4.3. Summary

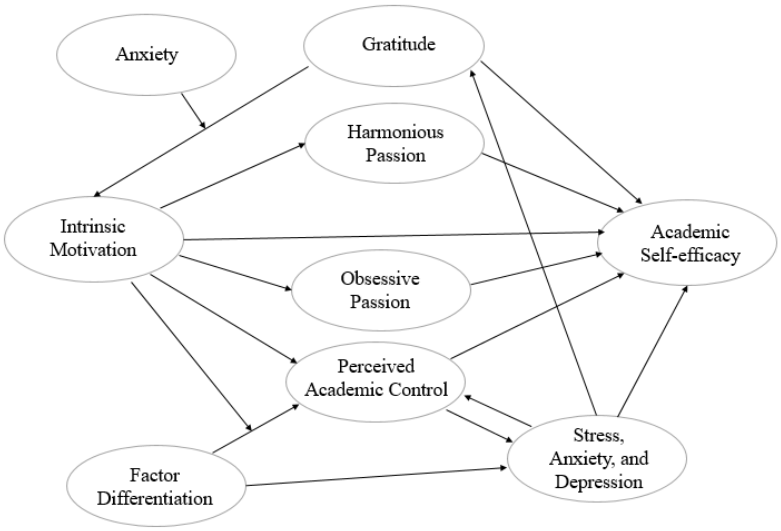
Chapter 4 summarized the key findings of the current research. The purpose was to present and to conduct a preliminary analysis of the data. I began with a descriptive analysis related to the mean, standard deviation, and Pearson's *r* correlation for each of the variables of

the current research Thesis and provided the correlation matrix. Finally, I reported the results of the items of each of the questionnaires and the analysis of each of the hypothesis regarding the mediation and moderation models.

To conclude, it was interesting to see that most of the relationships between the variables were statistically significant in the models, some were moderate, and others were low. The results and the analysis of the findings shown in this chapter will represent the foundation for the ensuing chapters in this Thesis. Also, from these results, the reader can learn about the variety of emotions that influence students' academic self-efficacy. The results can provide insights into helping find ways to support students during their college journey. I will focus on the most relevant findings related to the risk and protective factors that played a fundamental role in students' academic self-efficacy levels and wellbeing to reflect and to connect them to prior research. The following chapter will include a discussion, explanations, and insights related to the results of the analysis of the hypotheses.

Chapter 5. Discussion

The purpose of the present study was to investigate variables that positively or negatively predicted first-year university students' academic self-efficacy levels and those that increase or decrease negative emotional states. As mentioned in Chapter 2, the following is the hypothetical conceptual model that linked together the variables in one model.



I isolated the variables of interest that led to the six hypotheses based on a thorough literature review. Each of them tested different portions of the conceptual model designed. The intention was to link students' responses collected at two different periods with approximately a 6-month timeframe to examine correlations and possible changes among the study variables. In this chapter, I present a reflection and a discussion of the findings to connect them and to contrast them with prior researchers' studies presented in the literature review.

5.1. Hypothesis 1

I tested a parallel multiple mediator model in which Intrinsic Motivation influenced Academic Self-efficacy directly and indirectly through Harmonious and Obsessive Passion for academics, as well as students' Perceived Academic Control. I wanted to know whether Intrinsic Motivation influenced the mediators and whether they were a cause of Academic Self-efficacy. I

concluded that students' Intrinsic Motivation at T1 was strongly and statistically significantly and positively related to students' levels of Harmonious Passion at T2. Prior researchers have noted that Intrinsic Motivation shares some conceptual similarities with Harmonious Passion because they both involve interest towards an activity and they lead to adaptive outcomes (Vallerand, 2015; Vallerand et al., 2003). For example, individuals who are intrinsically motivated about an activity experience intrinsic pleasure, positive emotions, feelings of satisfaction, and enjoyment, which leads to adaptive outcomes (Vallerand, 2010, 2012a; Vallerand & Verner-Filion, 2013). Harmonious Passion, which is intrinsically related to people's identities when they autonomously engage in the action that they love (Schellenberg et al., 2016, 2018), relates to adaptive motivation and self-regulation, such as intrinsic motives, to reach their objectives (Curran et al., 2011). Therefore, Harmonious Passion emanates from intrinsic tendencies of the self that produce motivational energy freely to take part in the activity because of the intrinsic pleasure originated from learning something new (Deci & Ryan, 2000). Then, passion permeates into students' everyday activities, making a difference in their lives (Vallerand, 2010).

Intrinsic Motivation at T1 also was a statistically significantly and positive predictor for Perceived Academic Control and Academic Self-efficacy at T2. There is consistency between these results and previous research. For example, it has been found that Intrinsic Motivation for learning has positive predictive effects on students' academic outcomes over time (Stupnisky et al., 2013). For instance, 96.8% of the students at T1 and 93.9% at T2 agreed on *"It was important to me to do well at this task"* (see Table 7, Item 6). Some researchers claimed that intrinsic motivation predicted perceived control; for example, motivation to engage in academia for self-determined reasons predisposes individuals to form beliefs that they can influence outcomes congruent with this motive (Staunton et al., 2015). Besides, self-determined individuals can experience the freedom of choice over being or not being in control (Deci & Ryan, 1985). These

results are consistent with my findings that intrinsic motivation predicted perceived control. The reason is that students, who engage with a high interest in a task (Linnenbrink & Pintrich, 2002) to experience learning, have a goal-oriented behaviour (Deci & Ryan, 2000) that increases their academic development. Thus, their self-determined motive relates to their perceptions that they can influence outcomes.

Even though self-efficacy beliefs partly govern motivational processes (Bandura, 1994), research also has evidenced that intrinsically motivated individuals who experience the inherent pleasure to engage in an activity increased their perception of efficacy beliefs (Buch et al., 2015). Schmitt et al. (2003) argued that people have to be both capable and motivated to perform well. Therefore, ability and motivation are both factors that affect performance. The authors concluded that it is possible to infer that there is a reciprocal relationship. Then, it could be possible that, on the one hand, self-efficacy fosters intrinsic motivation, and on the other hand, intrinsic motivation could influence self-efficacy. In line with this, Deci and Ryan (1985) claimed that the need for *self-determination,* fundamental to intrinsic motivation, is "closely intertwined with the need for *competence*" (p. 32). Deci and Ryan (2000) argued that people engage in activities that they find interesting, which relates to White's (1959) study on the nature of motivational aspects of competence. He highlighted that motivated individuals engage in the task to experience efficacy. As I mentioned in Chapter 2, because motivation is a direct determinant of performance (Borman et al., 1991), intrinsically motivated students engage in learning to experience efficacy and satisfaction (Deci et al., 1991; White, 1959). Connected to this, some researchers have claimed that intrinsic motivation relates to the feeling of competence (Kılıçoğlu, 2018) and self-efficacy "when applied to the achievement domain" (Deci & Ryan, 2000, p. 260). Then, students who intrinsically connect and engage in an activity know that they can reach their desired outcomes, and they enjoy feeling competent (Bandura, 1977, 1989). More specifically, and in line with my

results, Black and Deci (2000) evidenced that students who were intrinsically motivated at the beginning of the year perceived themselves as being competent at the end of the term. In other words, those who experienced a task as meaningful were intrinsically motivated and eager to engage in academic activities (Kılıçoğlu, 2018) and developed high levels of self-efficacy as learners (Buch et al., 2015; Guay et al., 2020; Williams & Deci, 1996). Among the results of the current Thesis, these effects were mediated by students' perceptions of their academic control.

The analysis of the findings supported that students' levels of Harmonious Passion and perceptions of academic control at T2 were statistically significantly and positively related to students' Academic Self-efficacy at T2. In reviewing the literature, I found that Perceived Academic Control and self-efficacy are constructs that involve students' beliefs that they are able successfully to engage and to perform a task, which is why they are related (Pintrich & Groot, 1990). Besides, students' levels of Perceived Academic Control are a predictor of their academic accomplishments (Stupnisky et al., 2012). Rodin (1990) concluded that perceived control relates to "a sense of personal competence" (p. 4) and Skinner (1996) claimed that "the feelings of efficacy result from experiences of control" (p. 557). Also, when students engage in passionate activities, they experience higher levels of harmonious passion, which, in turn, influence their psychological functioning (Vallerand, 2010). Therefore, their academic experiences become more meaningful to them (Bureau et al., 2017), and they feel self-efficient and competent (Forest et al., 2012), as evidenced by the results of my findings. For example, 82.3% of the students at T1 and 85.2% at T2 reported that *"The new things that I discover with this activity allow me to appreciate it even more"* (see Table 9, Item 3) and that *"My activity is well integrated in my life"* (77.5% at T1 and 74.9% at T2, see Table 9, Item 8). Moreover, HP and intrinsic motivation are related due to the positive emotions associated with the activity (Vallerand, 2015), and individuals need to develop and to sustain passion and motivation for an enduring sense of

efficacy (Rampa, 2014). After reflecting on the analysis of the paths described in the previous paragraphs, I conclude that Harmonious Passion mediated the effect Intrinsic Motivation had on Academic Self-efficacy and that students' perceptions of their academic control also mediated the effect that Intrinsic Motivation has on Academic Self-efficacy.

Although Intrinsic Motivation at T1 was a statistically significant predictor for Academic Self-efficacy, as well as for Harmonious Passion and Perceived Academic Control at T2, it was not statistically significant in the presence of Obsessive Passion at T2 as a mediator. Thus, students' intrinsic motivation at T1 was small and not statistically significantly related to Obsessive Passion at T2. For example, those who *"enjoyed doing an activity very much"* (see Table 7, Item 1) did not feel an external force that possessed and controlled them (Wang et al., 2008), which might be why Intrinsic Motivation did not relate to Obsessive Passion. In addition, the findings showed that students' levels of Obsessive Passion at T2 were weak and not statistically significantly and negatively associated with students' Academic Self-efficacy at T2. For example, 68.2% of them agreed on having *"to study more hours when faced to difficult tests"* at T2 (see Table 13, Item 5) because they might not trust enough on their academic efficacy. Thus, Obsessive Passion did not mediate the relationship between Intrinsic Motivation at T1 and Academic Self-efficacy at T2. However, and contrary to my findings, some researchers have reported that Obsessive Passion shared "moderate positive bivariate correlations with intrinsic motivation" (Curran et al., 2011, p. 667). Others have shown that obsessive and harmonious passionate individuals engage with the activity because they like it; thus, the task takes considerable space in their identities (Vallerand et al., 2003). However, the relationship was significantly stronger for obsessive passionate than for harmonious passionate people because of the compulsive behavioural engagement that Obsessive Passion entails (Curran et al., 2011). Therefore, the Obsessive Passion for a task is more relevant in individuals' identities than is the

Harmonious Passion, and it creates an internal pressure with other activities in their lives (Vallerand et al., 2003).

I found it interesting to relate the association between controlled motivation and obsessive passion to explore and to explain the finding described in the previous paragraph. As discussed in the literature review, it is known that, even though obsessive passionate individuals participate in an activity because they like it, their engagement is out of their control, and it takes a disproportionate space in their lives and identities (Vallerand et al., 2003). Thus, Schellenberg and Bailis (2015) and Schellenberg et al. (2016, 2018) concluded that, obsessive passionate students are fearful of failure, which is why they treat themselves with no compassion when they fail. Therefore, obsessive passionate students compulsively and rigidly persist in engaging in the activity with no limits. They feel that they will not be able to reach their goals, which is a tendency of maladaptive outcomes in times of adversity (Curran et al., 2011; Vallerand, 2010, 2015). Because Intrinsic Motivation only leads to adaptive results and not to maladaptive outcomes, as shown in several reports, it can be deduced that this might be the reason why Intrinsic Motivation cannot predict Obsessive Passion (Deci & Ryan, 2000; Vallerand, 2010).

I conclude that these results are consistent with my findings, in the sense that in the Chilean context, Intrinsic Motivation did not relate to Obsessive Passion, and obsessively passionate students did not feel academically self-efficient. Perhaps, students from the Chilean context tend to engage in academics through a more controlled motivation orientation rather than in a more autonomous manner as harmonious passionate students might do due to the intrinsic pleasure that it derives (Duckworth et al., 2016). Therefore, obsessive passionate students might engage in academics mainly because of the possible outcomes attached to the activity (i.e., extra points for a task, competition, the need to be accepted, and rewards) (Vallerand et al., 2003) rather than because of an inner motivational attraction towards an activity. As mentioned in

Chapter 1, state-sponsored university loans in Chile have increased the indebtedness of first-generation students from disadvantaged backgrounds (58% of the sample) and those from a low socio-cultural and economic environment (almost 80% of the students). These students might feel an uncontrollable internal pressure originated from internal contingencies, such as the need to be socially accepted (Vallerand et al., 2003). Alternatively, these students might become obsessively engaged in academia because they might think that they owe their parents for the financial effort they make so that their children can pursue a university degree. Then, their passion for the activity engagement becomes uncontrollable.

To conclude, Intrinsic Motivation (IM), Harmonious Passion (HP), and Perceived Academic Control (PAC) were factors that influenced positively students' beliefs in their academic self-efficacy (ASE); however, Obsessive Passion (OP) was a factor that was not statistically significantly and negatively related to students' ASE levels. Thus, the findings partially supported my hypothesis that students' levels of Harmonious and Obsessive Passion for academics, and students' PAC at T2, mediated the relationship between IM at T1 and ASE at T2. However, it did not work in the presence of OP as a mediator because the indirect effect of IM on ASE through OP did not contribute to the model estimation. In other words, OP does not mediate the effect IM has on ASE, which is why this hypothesis was partially supported. Future research should investigate the reliability of the finding that OP does not play a role in mediating the effect between IM and ASE.

5.2. Hypothesis 2

I analysed a simple mediation model with only one mediator variable, Intrinsic Motivation at T2, and two pathways. I wanted to determine whether changes in Gratitude at T1 were provoking changes in Academic Self-efficacy at T2 because of the presence of Intrinsic Motivation at T2, as the mediator variable. I concluded that students' Gratitude at T1 was small

and statistically significant and positively related to students' levels of Intrinsic Motivation at T2. Psychological researchers have highlighted that when people feel grateful, they experience life satisfaction (Mairean et al., 2019; Van Cappellen, 2017), which is in line with several of the results that generated the most agreement—for example, *"I have so much in life to be thankful for"* (see Table 10, Item 1), and *"If I had to list everything that I felt grateful for, it would be a very long list"* (see Table 10, Item 2). Thus, gratitude contributes to people's well-being (Baumsteiger et al., 2019). Several other researchers have pointed out that gratitude influences people to focus on the positive aspects in their lives (Chaves et al., 2016; Emmons et al., 2019). Thus, people with high levels of gratitude perceive their lives' events as a gift (McCullough et al., 2002); this deep appreciation is intrinsically pleasant and leads to Intrinsic Motivation and joy (McCullough et al., 2001). People feel a sincere interest in the action itself (Ryan & Deci, 2000) and when they realize that they have been benefited from the benevolence actions of others, they respond with grater motivation (McCullough et al., 2001). In other words, gratitude promotes more positive emotions, cooperative actions, reciprocation, and intrinsic motivation (Stellar et al., 2017).

Gratitude engages individuals to transcend their own needs and to focus on others (Mairean et al., 2019; Stellar et al., 2017; Van Cappellen, 2017). After all, it increases the willingness to help others (Niedenthal & Brauer, 2012), and the motivation to engage in prosocial actions (Armenta et al., 2017; Grant & Gino, 2010) because it is intrinsically and inherently enjoyable to do so (Sheldon & Lyubomirsky, 2006). Thus, gratitude is positively associated with Intrinsic Motivation (Hicks et al., 2018). For example, students who experience gratitude intrinsically engage in their learning settings (Froiland, 2018), which is consistent with my findings in the sense that Gratitude at T1 was statistically significant and positively related to students' levels of IM at T2.

As noted in Chapter 2, several researchers have connected positive emotions to self-efficacy. However, there are not enough studies that specifically linked gratitude to self-efficacy in undergraduate students, which was precisely the gap that I intended to fill within the broader literature to contribute to the educational field and to my workplace. I reported that Gratitude at T1 was a small and statistically significantly predictor for Academic Self-efficacy at T2. Consistent with this finding, Bandura (2010) claimed that emotions influence individuals' judgments of their efficacy (Bandura, 2010). Besides, several researchers have revealed that when people are thanked for their prosocial actions, they feel valued and appreciated (Froh et al., 2010). When this occurs, it generates high levels of self-efficacy (Grant & Gino, 2010), an essential human motivation to feel competent and successful at attaining a specific goal (Bandura, 1977; Ryan & Deci, 2000). Also, highly grateful people enjoy spending more time in the activity because it produces positive emotions. They know that their enjoyment and engagement with the task will lead them to succeed. For example, students strongly agreed on having *"so much in life to be thankful for"* (see Table 10, Item 2). Also, they firmly believed that they *"work on any task and achieve good grades"* (see Table 13, Item 1) because they know that *"doing this activity could be beneficial"* (see Table 7, Item 8). Finally, gratitude motivates individuals to self-improve (Stellar et al., 2017), which is intrinsically rewarding and perceived as a decisive and an influential factor in academic performance (Augustyniak et al., 2016).

Students' levels of Intrinsic Motivation at T2 were moderate and statistically significant and positively related to students' levels of Academic Self-efficacy at T2. Prior researchers have shown that those who are intrinsically motivated are interested and excited about the activity, and they are confident that they can do it well, which, in turn, is manifested as both higher confidence and self-efficacy for the activity (Ryan & Deci, 2000). I can conclude that these results are consistent with my findings, in the sense that those who experience spontaneous, sincere interest,

and intrinsic motivation towards an activity are willing to engage again in it because they enjoy feeling efficacious with respect to that task (Deci & Ryan, 2000; Guay et al., 2020; Ratelle et al., 2007; White, 1959). They want to bring out more of that positive emotion and feelings of success in their lives (Grant & Gino, 2010).

Finally, I found that Intrinsic Motivation at T2 was statistically significant and that Gratitude at T1 did not lose its statistical significance when the mediator (Intrinsic Motivation) was included in the model. For instance, students agreed on the following: *"I believe doing this activity could be beneficial"* (see Table 7, Item 8) and *"I believe this activity could be of some value to me"* (see Table 7, Item 7). The reason is that they intrinsically enjoy and appreciate engaging in the activity (Stellar et al., 2017) because they also enjoy feeling efficacious for what they do (Deci & Ryan, 2000). They experience a sincere interest, and they think that they have the learning resources that they need to succeed (Monteiro et al., 2015).

I concluded that Gratitude and Intrinsic Motivation (IM) were factors that influenced positively students' beliefs in their academic self-efficacy (ASE). Thus, my findings supported my hypothesis that students' levels of IM at T2 mediated the effect Gratitude at T1 had on ASE at T2. However, and because I decided to add a new path to the relation between students' Gratitude at T1 and students' IM at T2, the mediation, this time, depends on the levels of the moderator variable I chose to add to the model.

5.3. Hypothesis 3

I tested a moderated mediation model to learn about the effect of the moderator variable, Anxiety at T1, on the direct, indirect, and total effects of the mediated model. I was interested in analysing and learning about the conditional effects that occur when the impact of an independent variable (Gratitude at T1) on a dependent variable (Academic Self-efficacy at T2) through a mediator variable (Intrinsic Motivation at T2) might change depending on the levels of the

moderator (Anxiety T1) (Baron & Kenny, 1986). As I mentioned earlier, gratitude is a positive emotion rooted in the aspiration and motivation to care for other's well-being, and at the same time appreciating the benefit received (Emmons & McCullough, 2003; Mairean et al., 2019). Besides, students who regularly feel grateful tend to be more engaged and motivated in academic contexts (Bureau et al., 2017; Froh et al., 2010), and this, in turn, influences their learning outcomes (Wang et al., 2008). Intrinsic motivation deals with behaviour performed out of pleasure and enjoyment (Vallerand, 2003, 2012a) because it involves an inherent satisfaction to engage in the activity (Hammerschall, 2019), which is why it relates to positive emotions (Weinstein & Ryan, 2010). These definitions clearly show that Gratitude and Intrinsic Motivation share certain common concepts, which are consistent with my findings in the sense that students who presented greater levels of Gratitude also showed high levels of Intrinsic Motivation. Thus, Gratitude at T1 was moderate and statistically significant and positively related to students' levels of Intrinsic Motivation at T2 ($r = .33$, $p < .001$), as well as Anxiety at T1 (see Table 16).

Anxiety is linked to feelings of tension and worrying thoughts (American Psychological Association, 2019). It might affect students' capacity to overcome academic challenges because this negative emotional state influences their cognitive functioning and learning abilities (Kumari et al., 2019). When people engage in an activity that they perceive as being intimidating and threatening, they choose to avoid it (Bandura, 1977), which is why people tend to procrastinate because it is a way to escape from psychological distress (Constantin et al., 2018). Students who procrastinate about working on an assignment intensify their levels of anxiety (Onwuegbuzie, 2004). However, when people believe that they are capable of reaching positive outcomes, their levels of anxiety decrease because they do not feel intimidated; thus, they decide to undertake the challenging activity (Bandura, 1977). When individuals feel worried about something, and cannot easily change their negative mood, it is difficult for them to find reasons to feel grateful about a

specific experience. Those who perceive negativity in life and future experiences (Beck, 1976) have low levels of gratitude towards life (Wong et al., 2018) and vice versa. Thus, the way individuals perceive a specific life experience relates to how they interpret the events of their lives (Wood et al., 2010).

Several researchers have revealed that low levels of well-being are connected to negative affect, such as depression and anxiety (Sanjuan et al., 2008; Wood et al., 2010), which is in line with the results of the items of the questionnaires that generated the most agreement—for example, *"I was aware of dryness of my mouth"* (see Table 12, Item 2) and *"I was worried about situations in which I might panic and make a fool of myself"* (see Table 12, Item 9). However, Emmons and McCullough (2003) documented that gratitude, which is a pleasant and positive emotion, is associated with well-being, and the greater positive affect, the higher the levels of grateful emotions. In conclusion, Gratitude denotes a protective factor against anxiety because it is a positive emotion (Petrocchi & Couyoumdjian, 2016). I conclude that these results are consistent with my findings in the sense that the interaction between Gratitude and Anxiety is negatively statistically significant (r = -.10, p < .01), albeit small (see Table 16). It means that there is an inverse relationship between the effect of the independent variable and the product or interaction. In other words, when the levels of Gratitude increase, the effect of the interaction decreases. Finally, there is a moderated effect, which is stronger for people who experienced fewer levels of anxiety compared to those who experienced higher levels of anxiety (see Table 17).

The *conditional effect* of Gratitude at T1 on Intrinsic Motivation at T2 with Anxiety at T1 as the moderator was more influential among students experiencing less Anxiety (r = .20, p < .001) than among those experiencing greater Anxiety (r = .08, p < .01) (see Table 17). Gratitude influences individuals with less anxiety more than for those who experience high levels of

anxiety. Moreover, students with low levels of Anxiety and high levels of Gratitude experienced more levels of Intrinsic Motivation compared to those with high levels of Anxiety. Thus, people who experienced higher levels of Gratitude were those who perceived less negativity in their lives. So, they were less anxious than were those who perceived negativity in their lived experiences. However, students with low levels of Anxiety, but low levels of Gratitude, presented low levels of Intrinsic Motivation as well, compared to those with high levels of Anxiety. Thus, being grateful is relevant in the interaction between Gratitude at T1 and Anxiety at T1 over Intrinsic Motivation at T2 because it enhances positive emotions. However, sustaining high levels of gratitude in inhibitory situations to emotional experiences (Patel, 2019) is very difficult to reach. As mentioned in Chapter 1, the social movements reflected the abuses that Chileans have experienced. Challenges related to equity persist (Guzman-Valenzuela, 2016), socioeconomic inequalities remain (Kennedy & Murray, 2012), and feelings of indignation have not been adequately addressed (Guzman-Concha, 2012). Consequently, these long-term negative and intense experiences increased people's anger and fear (Guzman-Concha, 2012), emotions that provoke high levels of negative emotional states. As mentioned in Chapter 2, these negative emotional states have the opposite effect and function of positive emotions (Pekrun et al., 2011); they influence people to focus only on the imposing threat and their ability to build personal resources decreases (Fredrickson, 1998).

I can conclude that my findings are consistent with those of other researchers in the sense that when people manage to reduce their levels of Anxiety, they have chances to bring gratitude into their lives, which is intrinsically pleasant, and, in turn, leads to Intrinsic Motivation (McCullough et al., 2001). People with lower levels of Anxiety are more capable of focusing on what is fulfilling in their lives than on what goes wrong (Hill et al., 2013). The reason is that they can connect to less punishing and more compassionate relationships with the self when things do

not go as one expects (Petrocchi & Couyoumdjian, 2016). Thus, grateful people experience less Anxiety, mostly because they are sympathetic toward themselves when something goes wrong and because they are more capable of focusing on the positive aspects and outcomes in their lives (Chaves et al., 2016; Emmons et al., 2019).

In Hypothesis 2, I concluded that Intrinsic Motivation at T2 mediated the relationship between Gratitude at T1 and Academic Self-efficacy at T2. However, the mediation depended on the levels of the moderator variable that I added to Hypothesis 3 (Anxiety at T1). In other words, and according to my findings, the *conditional indirect effect* of Gratitude at T1 on Academic Self-efficacy at T2 through Intrinsic Motivation at T2 was statistically significant at each level of the moderator because the confidence interval did not contain a zero (see Table 18). These results are in agreement with other studies that have focused on how gratitude expressions, and their effects on prosocial attitudes, increase self-efficacy, a desire to feel competent (Grant & Gino, 2010). Experiencing gratitude stimulates people to engage in positive actions that benefit themselves and everyone (Armenta et al., 2017). Other researchers have analysed the effects of gratitude on individuals' well-being, which are not only a pleasant feeling but also energizing (Emmons & Mishra, 2011). These effects involve and motivate people intrinsically to engage in the activity that they find interesting (Deci &Ryan, 2000) as a way to experience self-efficacy (White, 1959) with respect to that activity (Ryan & Deci, 2000). Based on my results, I concluded that the moderator, Anxiety at T1, influenced the strength of the indirect effect of Gratitude at T1 on Academic Self-efficacy at T2, through Intrinsic Motivation at T2, and the moderated mediation effect was statistically significant.

A moderated mediation is a conditional effect that occurs when the impact of the independent variable on a dependent variable through a mediator (the indirect effect) changed due to the levels of the moderator (Baron & Kenny, 1986). The *index of moderated mediation*,

which is a quantification of the association between the indirect effect and the moderator, showed that this index was different from zero (Hayes, 2015). In conclusion, the findings supported my hypothesis that the mediation is moderated because the moderator, Anxiety at T1, has a nonzero weight in the function linking the indirect effect of Gratitude at T1 (X) on ASE at T2 (Y) through Intrinsic Motivation at T2 (M) to the moderator Anxiety.

5.4. Hypothesis 4

I tested a parallel multiple mediator model in which Stress, Anxiety, and Depression (the independent variable) at T1 influenced Academic Self-efficacy (the dependent variable) at T2 directly and indirectly through Perceived Academic Control at T2 and Gratitude at T2, the two mediators of the model. I tested whether the mediators were caused by Stress, Anxiety, and Depression and whether they were a cause of Academic Self-efficacy. Therefore, I analysed whether Stress, Anxiety, and Depression lost its statistical significance when the mediators were included in the model.

Students' levels of Stress, Anxiety, and Depression at T1 were small-to-moderate and statistically significant and negatively related to students' Perceived Academic Control at T2, which means that, as students' levels of Stress, Anxiety, and Depression at T1 increased, their levels' of Perceived Academic Control at T2 decreased, and vice versa. For example, the more they agreed on *"I felt that I was using a lot of nervous energy"* (see Table 12, Item 8), the less they decided on *"I have a great deal of control over my academic performance in my courses*" (Table 8, Item 1). Even though some level of stress might benefit students' personal growth, if they feel threatened by their academic context, their psychological states become unstable (Bhujade, 2017). Thus, their capacity to learn and to cope with the challenge can be affected, and this, in turn, might influence their academic control (Könings et al., 2008). Besides, stress provokes negative feelings that can result in depression, which might cause loss of interest, low

self-esteem, insomnia or excessive sleeping, or difficulties in concentrating (Bhujade, 2017). Also, when academics are highly valued, then students might experience high levels of anxiety and low levels of perceived control (Pekrun, 2006). It is interesting to add that, whether students manage to cope with challenging experiences or not depends on how they perceive their relationship to environmental events and, consequently, how they respond to those events (Martin & Daniels, 2014).

Perceived control relates to individuals' perceptions and beliefs that they can influence outcomes in their environments (Stupnisky et al., 2013). According to Respondek et al. (2017), perceived academic control is a "variant of perceived control" related to students' perception of their ability to succeed academically (p. 3). When students do not trust their capacity to influence adverse environmental events and their academic consequences, their levels of anxiety and depression increase, and vice versa (Pekrun et al., 2004, Pekrun, 2006). Thus, when students feel insecure, and their levels of Stress, Anxiety, and Depression increase, this influences how they perceive challenging and threatening experiences (Stupnisky et al., 2013), and the way in which they appraise their ability to cope with those events. Therefore, my findings are consistent with those of other researchers who have also identified that negative emotional states such as Stress, Anxiety, and Depression, are negatively associated with the feeling of being in control (Pekrun, 2006; Pekrun et al., 2004, 2011; Hall et al., 2006).

I concluded that students' levels of Stress, Anxiety, and Depression at T1 were moderately, statistically significant, and negatively associated with students' levels of Gratitude at T2. Thus, as Stress, Anxiety, and Depression at T1 increased, Gratitude at T2 decreased, and vice versa. For example, the more they agreed on *"I found myself getting agitated"* (see Table 12, Item 11), the less they decided on *"Long amounts of time can go by before I feel grateful to something or someone"* (see Table 10, Item 6). Positive emotions generate more emotions that

are positive (Fredrickson, 2004). When students do not appreciate positive aspects of their lives, or when they ruminate on negative experiences from the past, or they worry about the future, their levels of anxiety and stress increase automatically. Thus, they are not able to enjoy the positivity happening in the present time (Fagley, 2018) and their levels of gratitude decrease (Watkins & Bell, 2017), which is consistent with my conclusions after testing if high levels of Stress, Anxiety, and Depression at T1 were associated with lower levels of Gratitude at T2.

Several researchers have noted that emotions have relevant implications on students' academic achievement and levels of Academic Self-efficacy because they influence individuals' learning, performance, and educational outcomes beyond the effects of cognitive ability (Pekrun, 2001, 2006). It is reasonable to expect that negative emotions undermine cognitive resources (Pekrun et al., 2017). For example, Stress, Anxiety, and Depression negatively influences students' Academic Self-efficacy, whereas positive emotions have positive predictive effects on students' Perceived Academic Control and educational outcomes over time (Stupnisky et al., 2013). Interestingly, negative emotional states have a stronger influence on individuals than do positive ones (Baumeister et al., 2001). To conclude, it is expected that there is a negative relation between Stress, Anxiety, and Depression at T1 and Gratitude at T2.

As I indicated in the previous paragraphs and in the literature review, perceived control, in academic settings, is understood to be a stable psychological disposition that might affect students' Academic Self-efficacy and academic success (Fishman, 2014). Therefore, this is consistent with my findings in the sense that students' levels of Perceived Academic Control at T2 were moderate and statistically significant and positively related to students' levels of Academic Self-efficacy at T2. When individuals balance their perceived capacity to influence their environment and their perceived ability to be in alignment with environmental forces, they experience an adaptive process, which influences their levels of self-efficacy (Folkman, 1984).

For example, when students learn from a negative situation, they can control future similar experiences (Fishman, 2014). It is reasonable to expect that this contributes to self-efficacy beliefs in academics. Therefore, perceived control might function as a cognitive mediator of negative emotional states and of their self-efficaciousness (Folkman, 1984), which is consistent with my results and conclusions.

Another important finding was that students' levels of Gratitude at T2 were small but statistically significant and positively related to students' Academic Self-efficacy at T2. According to Emmons and McCullough (2003), gratitude occurs when people appreciate the actions of others, which is consistent with my findings—for example, *"I am grateful to a wide variety of people"* (Table 10, Item 4) and on *"If I had to list everything that I felt grateful for, it would be a very long list"* (T2, Table 10, Item 2). It also triggers self-improvement, for example, better academic and work productivity, and more prosocial attitudes (Armenta et al., 2017). Prior researchers have focused on how Gratitude relates to Self-efficacy beliefs in academic settings, and they have concluded that, as students' levels of Gratitude increased, so did their levels of Academic Self-efficacy (Datu & Yuen, 2020). When people focus on the bright side of their lives and their thoughts and feelings are filled with appreciation (Baumsteiger et al., 2019), it is expected that this can be related to higher perceptions of one's efficacy. To conclude, developing an appreciation of benefiting from different circumstances and actions of others, and focusing on positive emotions emerged from prosocial actions, might help individuals to put life in perspective (Wood et al., 2010), which fosters interpersonal relationships and self-efficacy perceptions in academic settings (Geng, 2018).

My findings showed that Stress, Anxiety, and Depression at T1 was a statistically significant and negatively predictor for Academic Self-efficacy at T2, which means that, as students' levels of Stress, Anxiety, and Depression at T1 increased, their levels' of Academic

Self-efficacy at T2 decreased, and vice versa. Fredrickson (2001) highlighted the influence of positive and negative emotional states during the learning process. Crum et al. (2013) claimed that stress could be perceived as a challenge that enhances performance, or as a threat, that debilitates productivity. Stress, Anxiety, and Depression can affect students' cognitive resources, influence their academic control, and their chances to succeed academically are reduced (Könings et al., 2008). As positive emotions generate an upward spiral phenomenon that leads to more emotions that are positive, such as gratitude, negative emotions tend to generate the opposite (Fredrickson, 2001, 2004). When emotions last in time, they generate emotional states (Cowie et al., 2001). Reflecting on this, and on the political unrest that reflected the long-standing grievances and negative emotions that Chileans have experienced for over three decades, I conclude that this generated long-lasting negative emotional states, palpable in the education sectors. These emotions have developed psychological disturbances (Tang et al., 2018) and might have provoked the social and students' movements described earlier. Then, it is expected that students focused on the imposing threats, which increased their levels of stress and anxiety and reduced their ability to build personal resources (Fredrickson, 1998).

In the case of positive emotions, these broaden cognition. For example, they influence people to become "healthier and more resilient"; thus, they can better recover from negative experiences compared with less resilient people (Froh et al., 2010, p. 146). It is not that grateful people will feel gratitude in any given occasion. Still, their appreciation of positive life events and their predisposition towards experiencing gratitude in specific situations is more significant compared with less grateful people (Watkins et al., 2003). Besides, several researchers have stated that gratitude positively relates to academic achievement (Froh et al., 2010), well-being, and to people feeling esteemed and valued as the beneficiary of the generosity of others (McCullough et al., 2002). Thus, it is reasonable to expect a negative relation between Stress,

Anxiety, and Depression at T1 and Academic Self-efficacy at T2, given that the former not only prevents people from appreciating the positive experiences from the present time but also makes people relive negative experiences of the past or engage in recurrent worrying thoughts about the future (Fagley, 2018). This, in turn, might be linked to more negative perceptions about one's capability in academic settings and individuals tend to feel insecure; they lose confidence risking their academic performance and academic results (Stupnisky et al., 2013).

To conclude, Perceived Academic Control (PAC), and Gratitude were factors that influenced positively students' judgments of their academic self-efficacy (ASE), and Stress, Anxiety, and Depression (SAD) were factors that negatively related to ASE. Thus, the analysis of the findings supported that SAD at T1 was not only a statistically significant and negatively predictor for both mediators, PAC and Gratitude at T2, but also for ASE at T2. Finally, the findings supported my hypothesis in the sense that PAC and Gratitude at T2 mediated the relationship between SAD at T1 and ASE at T2.

5.5. Hypothesis 5

I analysed a simple mediation model that included only one mediator variable, Perceived Academic Control at T2, and two pathways. One of the pathways represented the direct effect of Factor Differentiation at T1 (the independent variable) and Stress, Anxiety, and Depression at T2 (the dependent variable). The second pathway represented the indirect effect of Factor Differentiation at T1 on Stress, Anxiety, and Depression at T2, through Perceived Academic Control at T2 (the mediator). To confirm the mediator and the statistical significance in the model, I analysed whether Factor Differentiation at T1 lost its significance when Perceived Academic Control at T2, the mediator, was included in the model.

Emotional granularity is related to the ability to differentiate feelings (Lee et al., 2017). Emotion differentiation is known as Emotional Granularity, and it relates to emotional awareness

and to the ability to identify and to classify situations or experiences into discrete emotional categories (Pond et al., 2012). Factor Differentiation has been described as emotion differentiation, and it is the ability to "distinguish differences among similar emotions" (Kang & Shaver, 2004, p. 689). Students need to reach emotional understanding to label their feelings, which requires the ability to perceive and to identify feelings and to recognize that many emotions can co-occur (Garber et al., 2016). For example, when students understand that they are experiencing high anxiety levels before a test, they can choose to regulate and to modify that emotion and how they want to experience it (Gross (1998b). Thus, to develop effective emotion regulation processes is crucial to reach emotion understanding (Garber et al., 2016).

My findings showed that students' Factor Differentiation at T1 was statistically significantly and positively related to students' levels of Perceived Academic Control at T2. When individuals cannot distinguish among emotion categories, they experience low levels of granularity (Smidt & Sudak, 2015). Conversely, if they do reach an understanding of their emotions, they can make distinctions among similar emotions into discrete categories (Pond et al., 2012) and then regulate those (Gross, 1998b). According to Pekrun et al. (2011), achievement emotions are connected to students' academic performance. The authors claimed that if students can distinguish among various emotions and classify them into discrete categories before a test, they might relate these emotions to potential success and failure. Thus, students' perceptions of control about possible academic results are relevant.

It is reasonable to expect that students' levels of emotional awareness, and their ability to make subtle distinctions in emotion categories (Kang & Shaver, 2004), is connected to their levels of perception of academic control. Thus, when students become aware of their emotions and reach an understanding of them, they have more chances to regulate their feelings and their levels of Perceived Academic Control increase. As a result, these individuals can enjoy better

adaptive emotions (Stupnisky et al., 2012). Thus, the more individuals can differentiate their feelings, the higher their perceptions of control (Stupnisky et al., 2013).

Factor Differentiation was a statistically significant predictor for Stress, Anxiety, and Depression. Understanding that feelings emerge as a reaction to experiences and beliefs is relevant in emotional development and fundamental to treat stress, anxiety, and depression (Garber et al., 2016). Several researchers have suggested that emotion regulation resources mitigate negative emotions and emotional states (Pond et al., 2012) and foster higher adaptive psychological functioning (Lumma et al., 2017). Students with low differentiated emotion experiences cannot regulate their emotions (Barrett et al., 2001). Thus, activating emotion regulation is crucial, especially when intense negative emotions increase, more than when positive emotions are present (Barrett et al., 2001).

My findings are consistent with the results presented in the previous paragraph because Factor Differentiation was a statistically significant predictor for Stress, Anxiety, and Depression. The reason is that there is a greater need to reach high levels of emotional differentiation when there are high levels of negative emotions than when they are not (Barrett et al., 2001). I found emotion differentiation a relevant variable to explore in the Chilean context as an antidote to negative emotional states (Rowe et al., 2015). People tend to judge their capabilities based on their emotional states (Bandura, 2010) and an influential key to strengthening self-efficacy beliefs is by reducing negative emotional states (Bandura, 1994). A way to reach this is to become aware of emotions, which increases the chances to regulate them (Oriol et al., 2016), a process known as adaptive emotion regulation (Smidt & Sudak, 2015). Thus, Factor Differentiation and emotional regulation act as tools that buffer students against the consequences of negative emotions, thereby allowing them to cope better with their emotional states (Smidt & Suvak, 2015).

Students' levels of Perceived Academic Control at T2 were moderate and statistically significantly and negatively related to students' Stress, Anxiety, and Depression at T2. My results are consistent with prior researchers, who have noted that students' Perceived Academic Control negatively predicted negative emotions such as anxiety (Stupnisky et al., 2013). For example, students who did not perceive themselves in control of their academics (e.g., *"When I do poorly in a course, it is usually because I haven't given it my best effort,"* 74.6% agreed at T1 and 77.2% at T2, see Table 8, Item 7) were those who exhibited more significant levels of anxiety (e.g., *"I felt I was close to panic,"* 61.1% at T1 and 58.2% at T2, see Table 12, Item 15). Other researchers have concluded that students' levels of Perceived Academic Control are an essential predictor of academic achievement as well (Stupnisky et al., 2008, 2012). High-standard academic demands challenge first-year university students, which might influence their control over their academic performance (Respondek et al., 2017), especially when they have deficient levels of Perceived Academic Control and high levels of anxiety (Stupnisky et al., 2013).

Perceptions of control of educational outcomes can generate positive emotions (Stupnisky et al., 2013). Students who enjoy high levels of Perceived Academic Control have more chances to succeed academically (Respondek et al., 2017). Nonetheless, when individuals believe that they are not in control or cannot influence adverse outcomes, they might feel stressed and anxious (Stupnisky et al., 2013). Therefore, it is expected that as students' levels of Perceived Academic Control at T2 increase, their levels' of Stress, Anxiety, and Depression at T2 decrease, and vice versa. To conclude, if students do not manage to adapt to high-standard academic demands, their levels of negative emotions might increase, leading to lower levels of Perceived Academic Control (Respondek et al., 2017).

I found that the mediator, Perceived Academic Control at T2, was statistically significant in the model and that it served as the mediator of the effect of Factor Differentiation at T1 on

Stress, Anxiety, and Depression at T2. Prior researchers have claimed that academic emotions relate to students' levels of perceived control on their feelings in achievement contexts (Bieg et al., 2013), and achievement emotions flourish when students feel that they are in control and, consequently, negative emotional states decrease (Pekrun et al., 2011). When students understand how they feel, they are better positioned to change or to moderate strong negative emotions (Pond et al., 2012). Emotional Differentiation and Regulation increase in contexts wherein intense negative emotions happen (Barrett et al., 2001). The reason is that there is a greater need for Factor Differentiation and emotion regulation when intense negative emotions are experienced than in a context wherein positive emotions are present (Kang & Shaver, 2004). Thus, Factor Differentiation and Emotional Regulation are abilities needed to mitigate negative feelings before becoming more energetic or uncontrollable (Smidt & Suvak, 2015).

To conclude, emotion differentiation allows individuals to regulate their emotions because they can understand how they feel, a powerful strategy that influences negative emotions (Pond et al., 2012). Students' perceptions of their academic control and the importance of these outcomes are relevant (Pekrun et al., 2011). It is expected that this mediates the effect of emotion differentiation on negative emotions. These findings are consistent with my conclusions because Perceived Academic Control (PAC) mediates the relation between Factor Differentiation (FD) and Stress, Anxiety, and Depression (SAD). Finally, it is reasonable to expect that FD at T1 did not lose its statistical significance when PAC was included in the model, given that emotion differentiation allows individuals to control their emotions. Then, PAC and FD were factors that decreased students' levels of SAD.

In conclusion, the findings supported my hypothesis. However, and because I decided to add a new path to the relation between students' FD at T1 and students' PAC at T2, the strength

of the mediation, this time, will depend on the levels of the moderator variable I chose to add to the model.

5.6. Hypothesis 6

I tested a moderated mediation model, and I included the same variables used in Hypothesis 5, but I treated Intrinsic Motivation at T1 as the moderator of the indirect effect. I wanted to learn about the impact of Intrinsic Motivation at T1 on the direct, indirect, and total effects of the mediated model. Thus, I was interested in analysing the conditional effects that occurred when the impact of Factor Differentiation at T1 on Stress, Anxiety, and Depression at T2 through Perceived Academic Control at T2 had changed depending on the levels Intrinsic Motivation at T1.

Intrinsic Motivation at T1 influenced the relation between Factor Differentiation at T1 and Perceived Academic Control at T2. Consequently, this time, students' levels of Factor Differentiation at T1 were statistically significantly strong and not small as it was in Hypothesis 5 ($r = .16$, $p < .01$), and negatively related to students' levels of Perceived Academic Control at T2 ($r = -.74$, $p < .01$) (see Table 21). As I mentioned earlier, Factor Differentiation is the ability to make subtle distinctions among similar emotions within emotion categories (Pond et al., 2012). When individuals are aware of their feelings, as the participants of this study responded, *"Each emotion has a very distinct and unique meaning to me"* (see Table 11, Item 2), they have more possibilities to calibrate their emotional reactions to specific situations. Besides, if they manage to differentiate among similar emotions and to label them into discrete categories, they will apply adaptive responses (Demiralp et al., 2012).

Perceived Academic Control applies to educational learning settings (Stupnisky et al., 2013), and it relates to students' beliefs in their influence over success or failure (Respondek et al., 2017). When students are aware, understand, and manage their feelings and perceive themselves as

competent at a specific task, they enjoy engaging in that activity, so their Perceived Academic Control increases (Lee et al., 2017; Pekrun et al., 2017). On the contrary, if students do not trust their academic skills and do not manage to change or regulate what gave origin to that specific negative emotional state (Gross, 2015) their perceived competence and control are low (Pekrun et al., 2017). These findings are consistent with my results because when individuals can distinguish among similar emotions, they can regulate their feelings better. Thus, it is expected that they will experience high levels of perceptions of academic control (Stupnisky et al., 2012, 2013). (See Table 21.)

Another example of how my findings relate to previous studies focuses on the fact that students with high emotional creativity can identify and become more sensitive to the experienced emotions (Averill & Thomas-Knowles, 1991). They have the intrinsic interest and enthusiasm to learn from these past experienced feelings (Oriol et al., 2016). Besides, students with high emotional creativity engage in academics because of their inherent satisfaction of just engaging in it (Hammerschall, 2019). Consequently, they vigorously participate in the process of identifying, understanding, and regulating their emotions in a natural manner (Salovey & Mayer, 1990). Moreover, when the activity provokes satisfaction, they become intrinsically motivated and their ability to perceive control over their academics increases (Oriol et al., 2016). Thus, it is reasonable to expect that Intrinsic Motivation at T1 influenced the relation between Factor Differentiation at T1 and Perceived Academic Control T2. (See Table 21). For example, the majority of the participants claimed that *"It was important to me to do well at this task"* (96.8% at T1, see Table 7, Item 6). I can infer that this result has significantly impacted the results on the following two responses: *"I am aware of the subtle differences between the feelings I have"* (80.4% at T1, see Table 11, Item 6) and *"I see myself as largely responsible for my performance throughout my college career"* (91.3% at T 2, see Table 8, Item 4).

The interaction between Factor Differentiation at T1 and Intrinsic Motivation at T1 was positively statistically significant ($r = .20$, $p < .001$) (see Table 21). The ability to regulate emotions influences individuals to become inherently willing to change their emotions to reach desirable and positive outcomes (Gross, 2015). For this, individuals have to make distinctions within emotion categories (Kang & Shaver, 2004). Emotional differentiation allows individuals to regulate negative emotional states to avoid adverse experiences, such as anxiety and depression (Gross, 2015). Thus, those who intentionally attempt to control their emotions will experience intrinsic emotion regulation (Gross, 2014), which is consistent with my findings because the interaction between Factor Differentiation at T1 and Intrinsic Motivation at T1 was positively statistically significant. Therefore, there is a positive relationship between the effect of the Factor Differentiation and the product or interaction. In other words, when the levels of Factor Differentiation increase, the impact of the interaction also increases. Finally, there is a moderated effect, which is more robust for people who experienced higher levels of Intrinsic Motivation compared to those who experienced lower levels of Intrinsic Motivation (see Table 22).

The *conditional effect* of the Factor Differentiation (X) at T1 on Perceived Academic Control (M) at T2 with Intrinsic Motivation as the moderator at T1 was more influential among students experiencing more Intrinsic Motivation ($r = .26$, $p < .001$) than among those experiencing less Intrinsic Motivation ($r = .05$, $p = .33$) (See table 22). I concluded that it was statistically different from zero only at higher levels of the moderator. However, it was not statistically different from zero at lower levels of the moderator (see Table 22). Thus, Factor Differentiation influenced individuals with high levels of Intrinsic Motivation ($r = .26$, $p < .001$) but it did not influence individuals with low levels of Intrinsic Motivation ($r = .05$, $p = .33$). Moreover, students with high levels of Intrinsic Motivation and Factor Differentiation

experienced higher levels of Perceived Academic Control, compared with those with low levels of Intrinsic Motivation. In other words, high levels of Intrinsic Motivation, and high levels of Factor Differentiation were associated with higher levels of Perceived Academic Control. However, students with low levels of Intrinsic Motivation, but low levels of Factor Differentiation presented low levels of Perceived Academic Control as well, compared to those with high levels of Intrinsic Motivation. Thus, Factor Differentiation is relevant in the interaction between Factor Differentiation at T1 and Intrinsic Motivation at T1 over Perceived Academic Control at T2 because it is affecting more those who experience high levels of Intrinsic Motivation than those experiencing less Intrinsic Motivation.

Emotions can be harmful; for example, when negative emotions are prolonged in time, they generate negative emotional states (Cowie et al., 2001) harming oneself and others. An adverse environmental event might influence students' levels of Intrinsic Motivation, and their perceptions of academic control might be deflated (Ryan, 1982). Others might be able to change the quality of a feeling (Gross, 2015), for example, those who see the positive side of a challenging situation by facing it as a learning opportunity and wish to decrease negative states (Gross, 2015). Consequently, these students are intrinsically motivated, and so they can develop high levels of perceived competence (Williams & Deci, 1996). For example, 90.7% of the participants agreed on *"I believe doing this activity could be beneficial"* at T2 and felt responsible for their performance (see Table 7, Item 8). Thus, I conclude that my findings are consistent with those of other researchers because when people experience high levels of Intrinsic Motivation, they can better engage in their learning processes. They also show higher levels of perceived self-control (Oriol et al., 2016) compared with those with low levels of Intrinsic Motivation. It is expected that they experience academic satisfaction and are willing to focus on identifying, understanding, and regulating their emotions (Gross, 2015). For example, 82.6% of

the participants agreed on being able to *"perform any task that the teachers give, even if they are challenging"* (see Table 13, Item 3). They also demonstrated an 81.0% of agreement on being aware of the subtle differences between the feelings that they had (see Table 11, Item 6). Thus, it is reasonable to expect those highly intrinsically motivated people who have intense learning and goal-oriented behaviour (León et al., 2015) will be more willing to employ emotion regulation strategies than will those who are less motivated (Gross, 2015).

I estimated the difference between the *conditional indirect effects* of Factor Differentiation at T1 on Stress, Anxiety, and Depression at T2 through Perceived Academic Control at T2 at the two values of the moderator Intrinsic Motivation at T1. I concluded that it was statistically different from zero only at higher levels of the moderator. However, it was not statistically different from zero at lower levels of the moderator (see Table 23). Prior researchers have noted that when an activity provokes joy, pride, and satisfaction, students become engaged and intrinsically motivated, and this, in turn, potentiates their willingness to learn about their feelings, which influences their perceptions of their academic control (Salovey & Mayer, 1990). Students' Perceived Academic Control has a positive correlation with positive emotions and a negative association with negative emotional states, such as anxiety, stress, and depression (Stupnisky et al., 2013). To conclude, it is reasonable to expect that emotions and emotional states relate to how students perceive their learning process (Oriol et al., 2016). Thus, the higher the levels of emotional differentiation and regulation of emotions, the higher their perceptions of academic control (Stupnisky et al., 2013), mitigating negative emotional states (Smidt & Suvak, 2015), which is consistent with my findings.

Finally, the *index of moderated mediation* showed that this index did not contain a zero (Hayes, 2015). Thus, the mediation is moderated because the moderator has a nonzero weight in the function linking the indirect effect of Factor Differentiation at T1 on Stress, Anxiety, and

Depression at T2 through Perceived Academic Control at T2 to Intrinsic Motivation at T1 because the confidence interval did not contain a zero (95% *CI* = -.125, -.007) (see Table 23). Finally, the effect of Factor Differentiation at T1 on Stress, Anxiety, and Depression at T2, through the mediator Perceived Academic Control at T2, changed due to the levels of Intrinsic Motivation at T1. I concluded that Intrinsic Motivation at T1 influenced the strength of the indirect effect of Factor Differentiation at T1 on Stress, Anxiety, and Depression at T2, through Perceived Academic Control at T2, and the moderated mediation effect was statistically significant. In conclusion, the findings supported my hypothesis.

5.1. Summary

Chapter 5 addressed each of the research hypotheses presented in the current Thesis. The purpose was to analyse and to present the findings to connect them with prior researchers' results. Thus, I reviewed the literature to identify associations, similarities, and differences from those of other related investigations. To conclude, the analysis of the findings provided substantial evidence in understanding the influence of variables that positively or negatively predict first-year university students' academic self-efficacy levels and negative emotional states over 6 months.

Hypothesis 1. Students' levels of Harmonious Passion (HP) and Obsessive Passion (OP) for academics, as well as students' Perceived Academic Control (PAC) at T2, mediate the relationship between Intrinsic Motivation (IM) at T1 and Academic Self-efficacy (ASE) at T2. Therefore, high levels of IM at T1 is associated with higher levels of HP and PAC at T2 and, in turn, with higher levels of ASE at T2. Then, low levels of IM at T1 is associated with higher levels of OP at T2 and, in turn, with lower levels of ASE at T2.

HP emanates from intrinsic motivational energy (Vallerand, 2012a) and students' perceptions of their academic control depend on their levels of IM (Perry et al., 2001). Those who

intrinsically engage in an activity tend to perceive themselves as being self-efficient (Bandura, 1977, 1989).Therefore, these findings are consistent with my conclusions after testing whether IM at T1 was a statistically significant predictor for HP, PAC, and ASE at T2. PAC and self-efficacy are constructs that involve students' beliefs that they are able successfully to perform a task (Respondek et al., 2017). Besides, when students experience higher levels of harmonious passion they feel self-efficient (Forest et al., 2012). Hence, students' levels of HP and perceptions of their academic control at T2 mediated the relationship between IM at T1 and ASE at T2.

Contrary, because IM only leads to adaptive results (Deci & Ryan, 2000), it did not predict OP. When students become obsessed with an activity, their engagement is out of their control (Vallerand et al., 2003), which is why OP cannot emerge from IM. Also, the result of surveys indicated that obsessed students experienced lower levels of ASE because they might not trust enough on their academic efficacy. Thus, OP did not mediate the effect of IM on ASE.

The findings supported my hypothesis that students' levels of HP and PAC at T2 mediated the relationship between IM at T1 and ASE at T2. However, this hypothesis was partially supported because OP did not mediate the effect IM had on ASE.

Hypothesis 2. The relationship between Gratitude at T1 and Academic Self-efficacy (ASE) at T2 is mediated by Intrinsic Motivation (IM) at T2; therefore, high levels of gratitude at T1 are associated with higher levels of IM at T2 and, in turn, with higher levels of ASE at T2.

When people feel grateful, they experience life satisfaction (Mairean et al., 2019) because they focus on the positive aspects in their lives (Emmons et al., 2019). Thus, it is intrinsically pleasant and leads to IM (McCullough et al., 2001), which is consistent with my findings in the sense that Gratitude at T1 was statistically significant and positively related to students' levels of IM at T2. Grateful people enjoy spending more time in the activity because it produces positive emotions and they feel self-efficient (Bandura, 1977). Also, those who are intrinsically motivated

are confident that they can do it well, and reach higher self-efficacy levels (Ryan & Deci, 2000). I can conclude that these results are consistent with my findings, because feeling gratitude leads to intrinsic motivated students willing to engage in the activity because they enjoy feeling efficacious. Then, the findings supported my hypothesis that students' levels of IM at T2 mediated the relationship between Gratitude at T1 and ASE at T2.

Hypothesis 3. The indirect effect of Gratitude at T1 on students' academic self-efficacy (ASE) at T2 through students' Intrinsic Motivation (IM) at T2 is moderated by Anxiety at T1; therefore, it is expected that the moderated mediation effect will be statistically significant.

Those who perceive negativity in life (Beck, 1976) have low levels of gratitude (Wong et al., 2018) and vice versa. Thus, the way individuals perceive an experience relates to how they interpret the events of their lives (Wood et al., 2010). Gratitude denotes a protective factor against anxiety because it is connected to positive emotions (Petrocchi & Couyoumdjian, 2016) and there is a moderated effect, which is stronger for people who experienced fewer levels of anxiety compared to those who experienced higher levels of anxiety. Finally, researchers have analysed the effects of gratitude on individuals' well-being, (Emmons & Mishra, 2011), which motivates people intrinsically to engage in the activity (Deci &Ryan, 2000) as a way to experience self-efficacy (White, 1959). Based on my results, my hypothesis was supported and I concluded that the moderator, Anxiety at T1, influenced the strength of the indirect effect of Gratitude at T1 on ASE at T2, through IM at T2, and the moderated mediation effect was statistically significant.

Hypothesis 4. The relationship among Stress, Anxiety, and Depression (SAD) at T1, and Academic Self-efficacy (ASE) at T2 is mediated by Perceived Academic Control (PAC) at T2. Therefore, high levels of SAD at T1 are associated with lower levels of PAC at T2 and, in turn, with lower levels of ASE at T2. Then, the relationship between SAD at T1, and ASE at T2 is

mediated by Gratitude at T2; therefore, high levels of SAD at T1 are associated with lower levels of Gratitude at T2 and, in turn, with lower levels of ASE at T2.

I concluded that when students' levels of SAD at T1 increased, their levels of PAC at T2 decreased, and their chances to succeed academically are reduced (Pekrun et al., 2017) and vice versa. Positive emotions, such as gratitude, influence people to become more resilient; thus, they can better recover from negative experiences, compared with less resilient people (Froh et al., 2010). I concluded that as students' levels of SAD at T1 increased, Gratitude at T2 decreased, and vice versa. Besides, SAD negatively influenced students' ASE, which means that, as SAD at T1 increased, students' levels' of ASE at T2 decreased, and vice versa.

When individuals balance their perceived capacity to influence their environments, they experience an adaptive process, which influences their levels of self-efficacy (Fishman, 2014). Then, it is reasonable to expect that perceived control mediates the relation between negative emotions and students' levels of self-efficacy (Folkman, 1984), which is consistent with my results and conclusions. Prior researchers have focused on how Gratitude relates to ASE, and they have concluded that, as students' levels of Gratitude increased, so did their levels of ASE (Datu & Yuen, 2020). Finally, and based on the results, my hypothesis was supported and I found that PAC and Gratitude at T2 mediated the relationship between SAD at T1 and ASE at T2.

Hypothesis 5. The relationship between Factor Differentiation (FD) at T1 and Stress, Anxiety, and Depression (SAD) at T2 is mediated by Perceived Academic Control (PAC) at T2; therefore, high levels of FD at T1 are associated with higher levels of PAC at T2 and with lower levels of SAD at T2.

When individuals understand how they feel, they have more chances to regulate their emotions (Pond et al., 2012); thus, perceptions of control about academic results are relevant (Pekrun et al., 2011). Then, the more individuals can differentiate their feelings, the higher their

perceptions of control (Stupnisky et al., 2013). My findings are consistent with others in the sense that FD at T1 positively related to students' levels of PAC at T2 and it was a statistically significant predictor for SAD. Besides, students who enjoy high levels of PAC have more chances to succeed academically (Respondek et al., 2017). Therefore, I expected that as students' levels of PAC increased, their levels of SAD decreased, and vice versa. My results were consistent with prior researchers, who have noted that students' PAC negatively predicted SAD (Stupnisky et al., 2013).

To conclude, students' perceptions of their academic control mediated the effect of emotion differentiation on negative emotional states (Pond et al., 2012), which is consistent with my finding, supporting my hypothesis in the sense that PAC mediated the relation between FD and SAD.

Hypothesis 6. The indirect effect of Factor Differentiation (FD) at T1 on students' Stress, Anxiety, and Depression (SAD) at T2, through students' Perceived Academic Control (PAC) at T2, is moderated by Intrinsic Motivation (IM) at T1; therefore, it was expected that the moderated mediation effect would be statistically significant.

Students with high emotional creativity have the intrinsic interest to learn from past experienced feelings (Oriol et al., 2016) and they vigorously participate in the process of differentiating and regulating their emotions (Salovey & Mayer, 1990). Moreover, when the activity provokes satisfaction, they become intrinsically motivated and their ability to perceive control over their academics increases (Oriol et al., 2016). Thus, it is reasonable to expect that IM influenced the relation between FD and PAC. The results of my study showed that high levels of IM, and high levels of FD were associated with higher levels of PAC. Thus, it was reasonable to expect those highly intrinsically motivated to employ more emotion regulation strategies than those who were less motivated (Gross, 2015).

Finally, students' PAC has a positive correlation with positive emotions and a negative association with negative emotional states (Stupnisky et al., 2013). To conclude, it was reasonable to expect that emotions relate to how students perceive their learning process (Oriol et al., 2016). Thus, the higher students' ability to differentiate and to regulate emotions, the higher their perceptions of academic control (Stupnisky et al., 2013), mitigating negative emotions (Smidt & Suvak, 2015). It is consistent with my findings that supported my hypothesis in the sense that IM at T1 influenced the strength of the indirect effect of FD at T1 on SAD at T2, through PAC at T2, and that the moderated mediation effect was statistically significant.

The following chapter will include the conclusions that will seek to bring new insights related to the current study and to provide a contribution to the field of academics.

Chapter 6. Conclusions

To conclude, it is crucial to reflect, to assess, to present, and to discuss the legitimations that arise in a study throughout all its stages because it gives value to the findings and contributes to future research and it enables other researchers to use the results and conclusions (Benge et al., 2012). The possible threats to internal validity at the data collection stage that I will present relate to *history and instrumentation*. Finally, as an external threat, I will mention *population validity and specificity of the variables*. Despite these limitations, the current research includes recommendations, implications, and conclusions that can be explored and expanded in future research. Thus, future research could provide information that could contribute and inform educators and administrators about students' negative emotional states to implement initiatives that can become significant in students' learning processes and well-being.

6.1. Limitations of Study

At the data collection stage, I will present and discuss two possible threats to internal validity (i.e., *history and instrumentation*) and two potential threats to external validity (i.e., *population validity and specificity of the variables*).

History. In longitudinal studies, *history* might represent a threat to legitimation because the data collection occurs on more than one occasion (Creswell, 2012). Thus, there are more chances that events might happen and might change the analysis of the group of people under investigation (Cohen et al., 2007). As I mentioned in Chapter 1, income and challenges related to equity in Chile have evolved since 1990, and they persist (Kennedy & Murray, 2012; Palma, 2014). Even though the economic progress has placed Chile in a privileged position, compared with other countries from the same region, Chile is far below many other countries in terms of social inequalities (Palma, 2014).

It is relevant to consider the accumulated social resentment due to long-standing grievances and the civil unrest to contextualise this phenomenon in Chile (Guzman-Concha, 2012). As I mentioned earlier, there is a high degree of segregation in the education sector (Palma, 2014). In other words, there has been a low intergenerational social mobility, which has influenced the degree of social integration (Oranye et al., 2017). Thus, only a few students manage to enrol in high-quality HEIs (Guzmán-Valenzuela, 2017). Besides, an increased indebtedness began in 1990, leaving many students economically vulnerable after graduation (Bellei et al., 2014)—a reality that is still present. Consequently, students' movements began to emerge at the end of Pinochet's dictatorship. These movements have continued because of the feeling of injustice and indignation, which have increased throughout the years (Guzmán-Concha, 2012). For example, as I mentioned in the introduction chapter, the social outburst that invaded the capital's streets in Chile represents the indignation and civil unrest. To conclude, classes were interrupted in several educational institutions, including in the university where I work, in October 2019. Thus, I had to end my data collection process earlier than planned.

Even though the data collection occurred in peaceful times—that is, it concluded before the protests started—the findings might contain hidden discontent. The profound anger and civil unrest have not been a surprise to me. As I mentioned earlier, the student movements of 2006 and 2011, together with the civil protests of 2019, provide compelling evidence of the deep resentment and violence that are present in many sectors of the Chilean society (Carrasco-Jiménez, 2019). These long-standing grievances and abuses that the society has experienced over more than three decades also are present in the education sector. Thus, it might bring negative emotions, such as anger and fear among students (Mazzola, 2016), which, when prolonged in time, provoke and increase levels of negative emotional states (i.e., stress and anxiety) (Cowie et al., 2001). Thus, if students cannot reduce negative emotional states, they will not find ways to

modify or to strengthen their self-efficacy beliefs (Bandura, 1994). In other words, as students' levels of stress and anxiety increased, their levels' of self-efficacy decreased, one of the relations that was demonstrated in Hypothesis 4. Therefore, how much of a hidden discontent could my findings carry has become the question I have asked myself.

Instrumentation. Hypothesis 1 was partially supported because the findings showed that the levels of Harmonious Passion and Perceived Academic Control at T2 mediated the relationship between Intrinsic Motivation (IM) at T1 and Academic Self-efficacy at (ASE) T2. However, students' levels of Obsessive Passion (OP) at T2 did not. Thus, reflecting on the limitations of these findings, I focused on instrumentation as a possible internal threat to legitimation at the data collection stage. I computed Cronbach's Alpha values via SPSS (version 22) as the method to estimate the internal score consistency of the items involved in each of the seven instruments that I had administered (Weems et al., 2003) to determine whether the multiple items measuring the same constructs yielded reliable scores. Coefficient values of .70 or higher indicate that there is adequate internal consistency, and so the items are yielding scores in a consistent manner (Taber, 2018). Scores pertaining to the Obsessive Passion Subscale yielded an α reliability coefficient of .66 in T1 (see Appendix 3, Table 3), which means that they were relatively low and so the internal consistency was low. Consequently, it is possible that a reason why OP did not mediate the relationship between IM at T1 and ASE at T2 was due to the relatively low reliability coefficient, which can reduce statistical power (Onwuegbuzie & Daniel, 2002; Onwuegbuzie, Roberts, & Daniel, 2005). Therefore, OP did not contribute to the model estimation, and replications are needed to examine further the importance of this mediator.

Another possible internal threat to legitimation at the data collection stage relates to the reversed items from two of the seven questionnaires that I administered: the Perceived Academic Control Scale (see Table 8) and the Gratitude Questionnaire (see Table 10). I analysed the

percentages of disagreement and agreement of the items of each of the instruments. I concluded that students had difficulties in understanding the reversed items, which is why the responses from the reversed items were inconsistent. Consequently, it is possible that this significantly lowered the score reliability, which, in turn, likely attenuated the relationships associated with Perceived Academic Control and the relationships related to Gratitude in the models I tested.

Population validity. Regarding the external threats to legitimation at the data collection stage of the research process, I focused on population validity. Especially in quantitative research, the extent to which findings are generalizable from the sample to the total population might become a threat. I could only generalize my findings to students from higher education institutions that share similar background characteristics to mine in the sense that the type of student might influence the results. For example, and as I mentioned earlier, several students at my institution experience socio-cultural challenges and academic or economic demands. Almost 80% of the students belong to a low socio-cultural and economic background and 58 % of them are first-generation (Universidad Andrés Bello, 2017). In the Faculty of Education and Social Sciences, students with state-sponsored loans have increased over the past 3 years, from 54,4% in 2017 to 61,2% in 2019.

Further, 70% of the sample of the current study come from institutions mainly financed by the State, or by both, parents and the State. Almost 40 % of the participants' parents had completed an undergraduate level of education. Thus, these specific characteristics of the participants' backgrounds also might bring particular and unique results. Consequently, replications are needed to examine further whether my findings could be generalizable to Chilean first-year university students in general. That is, future research could help to determine the generalizability of my findings.

Specificity of the variables. There might also be a potential threat to external validity called specificity of the variables at the data collection stage, which happens when "the variables are so unique to the study that the findings are not generalizable" (Benge et al., 2012, p. 88). Replications might be interesting to examine further whether the variables of my study are unique and, consequently, to determine whether the findings could be generalizable to other studies. Nevertheless, the variables of my study have been significant in many previous studies (Schellenberg et al., 2018; Vallerand 2010; Vallerand et al., 2003). Thus, I decided to include them in my study.

6.2. Recommendations for Future Research

The limitations of the current Thesis represent opportunities to suggest other directions for future research. As mentioned in the Limitations section, the findings of the present study might contain hidden discontent, and this might become a limitation and an opportunity to suggest recommendations for future research. The legacy of the long-dead military and dictatorial regime, and the political repression, which began in 1973 and lasted for 17 years in Chile, has symbolized the suppression of free speech for years (Mason, 2012). The repercussions of the military regime still are present in the Chilean's society, even though the restoration of democracy began in 1990 (Gonzalez, 2012). The lack of equity and social mobility (Guzmán-Concha, 2017), the feelings of injustice, and the lack of free speech and fear that Chileans experienced during the dictatorship are still present among many families due to the suppression of free expression (Gonzalez, 2012). Consequently, these negative experiences might have generated excessive tension and elevated levels of stress (Cramer, 2000) among the Chilean citizens, which might have triggered the violence that gave origin to the social outburst in October 2019. Therefore, the findings indicate the need for further research on how inhibitory situations to emotional experiences (Patel, 2019) can influence Chilean university students' self-efficacy levels and emotional states.

After analysing my findings and reflecting on them, I concluded that when students experience high levels of anxiety, stress, or depression, their levels of perceived self-efficacy decrease. However, the more that students become aware of how they feel, the more chances they have to regulate and to control their emotions (Oriol et al., 2016). If they cannot regulate their feelings before they become stronger, they lose interest, and they do not enjoy engaging in academic activities. Therefore, focusing on students' academic emotions is becoming more necessary every day, especially when they experience academic challenges and pressures. Future research should engage in a more in-depth analysis of emotions, emotional states, and emotional differentiation and regulation in educational settings, especially when students experience trouble and tension. Also, positive emotions (i.e., gratitude) regulate the aftereffects of negative emotions and emotional states and, in turn, they generate personal and cognitive resources (Fredrickson, 2001). Consequently, and as I highlighted in Chapter 2, even though there are studies that have focused on positive emotions and self-efficacy, there is not enough research that links gratitude explicitly to self-efficacy among college students. Thus, further research is needed on this matter.

The outbreak of COVID-19 has affected people's lifestyles, for example, education, social interaction, transportation, economy, and business sectors. Social distance and reorganization of family life are two of many stressors that have become more influential (Fegert et al., 2020). Regarding the education sector, students have to rely 100% on technology to be able to continue with their classes because of the closure of schools and universities. Several of them might experience technological inaccessibility, poor digital skills and technology anxiety, learning disruptions, insomnia, poor learning outcomes, feelings of uncertainty, loneliness, and self-isolation, for example (Onyema et al., 2020). Consequently, feelings of fear, increased stress, high levels of anxiety, depression, and posttraumatic stress disorders, are more likely to be present during traumatic events like a pandemic (Khan et al., 2020).

The effect of other types of factors, social distancing, feelings of uncertainty, technology anxiety—to mention some factors—and the specific posttraumatic stress disorder implications of COVID-19 are unknown (Fegert et al., 2020). Because the findings of my study cannot be generalized across this pandemic condition, future replications are needed to examine further the impact of COVID-19 on emotional factors and emotional states that influence students' wellbeing and mental health, and consequently, affect their academic self-efficacy, perceptions of their academic control, and academic performance.

As I mentioned in the Limitations in this chapter, Obsessive Passion (OP) at T2, one of the mediators in Hypothesis 1, did not mediate the relationship between Intrinsic Motivation at T1 and Academic Self-efficacy at T2. Thus, OP did not contribute to the model estimation. One recommendation for future research relates to the instrument used. Because the reliability of the scores of the OP Subscale were relatively low, and taking into account the complexity of this construct, it is recommendable to administer a different instrument to investigate the reliability of the finding that OP did not play a role in mediating the effect between Intrinsic Motivation and Academic Self-efficacy. Another recommendation for future research on the results of Hypothesis 1 is that researchers should engage in analysing students' ways of engaging and connecting with academia. For instance, it might be interesting to learn whether students engage in an activity because they are intrinsically motivated and harmoniously passionate about it or because they are more of a controlled, extrinsically motivated and obsessed kind of student—the type of student who often feels urged to finish an activity or interested in earning extra points for a task. I conclude that this might have been why my findings showed that students' intrinsic motivation at T1 was small and not statistically significantly related to OP at T2. Perhaps, in future replications, and based on the findings mentioned in this paragraph, I would propose a conceptual model framework without OP.

Finally, another observation highlighted in the Limitations section relates to the inconsistency in the students' responses to the reversed items, which might have significantly lowered the score reliability in the questionnaires involved, and this, in turn, might have attenuated relationships associated with these variables. It is recommendable to key-reverse the items that were worded negatively in the Perceived Academic Control Scale and the Gratitude Questionnaire (see Appendix 2; Appendix 4). Besides, the current study involved testing longitudinal hypotheses at two points over a 6-month timeframe. Even though time was a relevant component, a final recommendation for future research is to expand the investigation by including more than two timepoints to reach even more robust conclusions. To conclude, because I did not use Structural Equation Modeling (SEM) to estimate the models of my study, as I mentioned in Chapter 3, I did not seek to fulfil any stability hypothesis; however, and for future research, it would be of added value to analyse the variables of the current Thesis using SEM and including latent variables, instead of PROCESS Macro for SPSS, also to analyse Time 1 self-efficacy in my prediction of Time 2 self-efficacy to determine whether the variables in Time 1 predicted changes in self-efficacy.

6.3. Implications

Implications for counsellors and faculty members of a higher education institution. It is essential to know that individuals react differently to stressful situations, and negative emotional states might influence their college adjustment and their ability to build personal resources, such as self-efficacy (Fredrickson, 1998). When students do not adapt to the new academic demands, their levels of negative emotional states increase, and this, in turn, influences students' perceptions of their control, their coping skills, and levels of academic self-efficacy (Respondek et al., 2017), as supported by one portion of the conceptual model shown in Hypothesis 4. Therefore, it is imperative that counsellors and faculty members often monitor

students' emotional states and learning outcomes. Also, and during the COVID-19 pandemic, students might be more exposed to domestic violence (Fegert et al., 2020). It is a risk that increases because they are all restricted to stay at their homes where there is a lack of social control and fewer chances to identify when students are at risk of becoming victims of this aggression or any other stressful situation. Working-class students cannot be left behind, their material conditions and social environments where they grow up might represent a risk even greater than that pertaining to middle class students (Manstead, 2018).

Counsellors and faculty members have to become alert of this increased risk and any other potential threat to students' mental health and well-being. For example, they have to be aware of students' emotions, their abilities to regulate stress and anxiety, and of any potential adverse psychological environment that might be affecting them, more than before the pandemic (Fegert et al., 2020). One way of increasing this awareness and state of alert is via the periodical application of surveys to become sensitive to suspicious signs of emotional threat. Teachers could meet and talk informally with each student and use a specific set of guided questions to identify and reach a better understanding of potential challenges.

Teachers should work closely together with counsellors, who should offer specific psychological strategies for them to provide support, to help students regulate their negative emotional states, and to increase their self-efficacy beliefs. For example, one type of emotion regulation strategy that teachers can teach their students to use is the *antecedent-focused emotion regulation*, which occurs before the generation of the emotion (Gross, 1998b). It modifies the influence of emotions by evaluating an emotional stimulus to alter emotions (Gross, 1998a) allowing early efforts at mood repair (Gross & John, 2003). The other strategy is the *response-focused emotion regulation*, which intervenes late—that is, after the feeling is generated (Gross 1998a). Emotion regulation influences adaptive functioning, and has significant consequences for

personal well-being, and psychological, and physical health (Tamir, 2011).Thus, developing first the ability in students to differentiate their emotions will help them regulate and mitigate negative emotions and avoid adverse experiences, such as anxiety and depression, and to reach positive outcomes (Gross, 2015; Smidt & Suvak, 2015). Thus, students who inherently and intentionally seek to regulate their emotions, experience intrinsic emotion regulation (Gross, 2014) and tend to perceive themselves as being self-efficient and capable of attaining good academic results (Kılıçoğlu, 2018). One way teachers can cultivate and teach these skills explicitly is through *tailoring their classroom instruction* to each student's emotional needs and perceptions of their academic abilities. The periodical application of the surveys to understand and to learn about students' emotions and emotional states can help teachers adjust and develop teaching strategies tailored to students' emotional and learning needs.

Moreover, what teachers and counsellors can offer to students is what Frederickson (2000b) called the *undoing effect* as a strategy to increase their self-efficacy beliefs. For example, they can prompt students to search for different thoughts and actions to replace the negative ones; this can help them stop focusing on negativity and threats and to be open to new ideas to build personal resources (Frederickson, 1998). Also, the *undoing effect* can foster students to engage in a motivated attitude towards academics (Salanova et al., 2011). Teachers also can provide *frequent and positive feedback* to increase students' personal resources (Carmona et al., 2015). Another strategy teachers could use to reinforce students' personal resources is by strengthening students' beliefs in their capabilities. For example, teachers can *avoid premature and highly challenging activities* where students can fail and *structure situations and environments for them to experience success*, because mastery experiences strengthen students' personal efficacy (Bandura, 2010). Teachers can *provide the tools for students to self-regulate and to learn how to choose the appropriate courses of action* to manage circumstances they might experience. Also,

and because students avoid threatening situations they know they will not be able to cope with (Bandura, 1977), teachers should *highlight the relevance of their self-improvement* rather than triumphs over others; students need to believe that they can control the outcome of situations (Skinner, 1996),

My findings are consistent with prior researchers who have argued that teachers' role in fostering students' intrinsic motivation (IM) and perceptions of their academic competence is pivotal (Taylor et al., 2014). The reason is that students who are autonomously motivated perceive themselves as being competent (Black & Deci, 2000). Teachers should use strategies to foster students' autonomy through *student-centred and active learning activities*. Students who perceive *teachers as autonomy supportive* become more competent (Black & Deci, 2000) because autonomy support is a predictor of self-efficacy (Oriol et al., 2017) and facilitates active learning (Vallerand, 2012b). Also, IM can become a predictor of perceived control (Staunton et al., 2015), which, in turn, influences efficacy (Skinner, 1996) because when students do well, they have high efficacy perceptions (Black & Deci, 2000). In conclusion, perceived academic competence, one of the mediators in Hypothesis 1, mediated the relation between IM and academic self-efficacy.

Based on another relation I tested, students with high levels of IM and high levels of emotional differentiation experienced higher levels of perceived academic control, compared to those with low levels of IM. Consequently, and as I mentioned in the findings and discussion chapters, emotional differentiation is more influential on those students who experience higher levels of IM than on those experiencing lower levels IM. In other words, the moderated effect is more robust for people who experienced higher levels of IM compared to those who experienced lower levels of IM. Besides, students' IM and their ability to perceive control over their academics increase when the activity provokes satisfaction (Oriol et al., 2016). Thus, students'

IM influenced the relation between emotional differentiation and their perceptions of academic control, a relationship consistent with the support for Hypothesis 6 from the current study. In this respect, cultivating emotional regulation, academic control, and IM not only is beneficial but also is crucial. One way teachers can cultivate students' IM is through *positive psychology techniques in their classes*, such as asking them to reflect on and to *write about potential intrinsic goals* (e.g., highlighting and writing about something interesting they learn in each class), which increases positive emotions toward learning (Froiland, 2018). Also, they can foster students to *choose topics of their interest* for class projects and teachers can use this information *to prepare meaningful classes* to engage students in a particular activity of their interest. A way teachers can foster students' perceived academic control is to analyze with them *good approaches to prepare for tests to anticipate academic outcomes.* Finally, teachers can "*provide choice* in assignments and tests and focus on effort and responsibility to earn grades" as a way to increase perceptions of academic control (Stupnisky et al., 2012, p. 89).

Counsellors should offer *psychosocial interventions* to support students who are emotionally challenged. They should explicitly teach emotional regulation techniques to enhance students' ability to differentiate their feelings especially when they experience high levels of negative emotions (Barrett et al., 2001) because they need to activate emotion regulation strategies to change that negative feeling before it intensifies (Pond et al., 2012).The relation found in the current study (more specifically the support for Hypothesis 5) between emotional differentiation and perception of academic control suggested that the more chances students have to regulate their feelings, the higher their levels of PAC. Consequently, these students can enjoy better adaptive emotions (Stupnisky et al., 2012) because their levels of anxiety and stress decrease. To conclude, and as noted previously, counsellors and faculty members need to work

closely and explicitly teach students to learn to label their emotions into discrete categories to apply adaptive responses when they need them. (See Appendix 8.)

Implications for administrators. The results of the current study evidence the triggers and buffers of students' potential mental health problems. They also bring ideas and light to future researchers *to design instructional* and *counselling programmes* adapted to target the needs that students have, which is crucial for early detection and psychological consultation (Tang et al., 2018). Leaders have to foster the development of appropriate emotional support services, such as *counselling*, to contribute to students' well-being. Besides, administrators can offer a *career course counselling* to provide support during students' induction into college to help them make efficient academic programme choices to have more chances to succeed academically, to provide information on what they will be capable of doing once they graduate (e.g. their potential workplace), among some ideas.

My findings could contribute to education because they provide evidence of vital significance in understanding the influence of students' negative emotional states, personal resources, motivational processes, and cognitive abilities on their learning outcomes. Leaders have to offer the appropriate mental health services, such as *psychotherapy treatments*, when needed. Students need to cope with academic stress, anxiety, and increased academic demands, especially in times of traumatic effects during and after the pandemic and to avoid or to reduce long-term consequences for mental health. Thus, efficient support services, such as counselling and mentoring programmes or psychological consultation, assist students in need, increase their life satisfaction in college, and promote long-term learning and well-being.

Besides, offering *positive psychology courses* to improve positive emotions towards learning and studying can be a crucial technique. Perceiving the positive aspects in life might help individuals to deal with challenging situations and adversity (Shaughnessy & Shepherd,

2018) and to develop improved coping with stress (Adler & Fagley, 2005). Besides, experiencing positive emotions in the classroom increase students' self-efficacy and commitment to academic tasks (Oriol et al., 2017). For example, providing *strategies for students to develop gratitude* towards their experiences in life will denote a protective factor against anxiety (Petrocchi & Couyoumdjian, 2016) and they might become more motivated in academic contexts (Froh et al., 2010). Designing positive psychology courses that can teach students to use positive psychology tools, such as keeping *gratitude journals or setting up intrinsic learning goals*, both are likely to increase intrinsic motivation and positive emotions toward learning (Froiland, 2018). Besides, when teachers use positive psychology techniques to foster students to set up their intrinsic motivation learning goals and to encourage their autonomy during the process of learning, this can lead to high levels of competence and self-efficacy (Froiland, 2018); which is an essential dimension of positive psychology derived from self-determination theory (Ryan & Deci, 2000). Based on my findings, these relationships are consistent with the support for Hypothesis 2 and 3, when I concluded that gratitude leads to intrinsically motivated students to engage in an activity because they know they will enjoy feeling efficacious (Deci & Ryan, 2000).

A positive psychology course can teach students the techniques described earlier that will help them to appreciate the present and positive aspects of their lives. Also, they can teach students to stop ruminating about negative experiences from the past or worries about the future (Baumsteiger et al., 2019). Further, these techniques can help students put their lives in perspective (Wood et al., 2010) and increase their academic perceptions of self-efficacy. Based on my findings, this relationship is consistent with the support for Hypothesis 4, when I concluded that, as students' levels of negative emotions decreased, their levels of gratitude and academic perceptions increased, and vice versa. Additionally, negative emotional states influenced students' Academic Self-efficacy, which means that, as the former increased, the latter

decreased, and vice versa. Thus, students' perceptions of their academic control and gratitude at T2 mediated the relationship between Stress, Anxiety, and Depression at T1 and Academic Self-efficacy at T2. As I mentioned in Chapter 1, and according to Gale and Parker (2014), there are three broad conceptions on the transition into Higher Education (HE): The first is *induction,* which relates to students' orientations to college; then, the *development* of HE students' identity; and, finally, *becoming*, which connects to the need for HEIs to focus on how to adapt to students' realities in socially inclusive ways. HEIs have to support students' integration into college and adjust their teaching practices to their needs. Besides, they should provide *enhancement interventions*, such as attributional retraining early in the academic year, to foster students' perceptions of academic control to encourage a sense of responsibility and to help them reframe the way they think about failure (Respondek et al., 2017). (See Appendix 8.)

Implications for students. First-year University students are exposed to a variety of stressors related to their adjustment to college life (Fila & Eatough, 2017). Emotional conflicts interfere with students' cognitive development processes (Fredrickson, 2000; Rodriquez et al., 2017). Therefore, students need to become aware of their emotions (Demiralp et al., 2012) to have more chances to regulate and to control how they feel (Oriol et al., 2016). Consequently, they might reach higher adaptive psychological functioning (Lumma et al., 2017), which will mitigate exposures of negative emotions (Smidt & Suvak, 2015). To summarize, when students experience high levels of negative emotions, it is crucial to reach emotional differentiation and emotional regulation because these elements provide meaningful insights on stress and anxiety resilience. One way to reach this is by *keeping a journal* in which individuals write down their negative experiences and negative emotions as a technique to keep track of how they feel to understand and to regulate emotions (Patel, 2019). Additionally, to manage challenges, students should focus on peers who have succeeded because they become social models who share the

skills and knowledge they need to develop, to modify, or to strengthen self-efficacy beliefs (Bandura, 2010). Finally, students should know that if they go through stressing experiences and anxiety, they are not alone. They should *stay in touch with peers*, and most importantly, they should look for help through talking to an expert and engaging in counselling sessions.

Several researchers have documented that students must believe in their influence over success or failure (Respondek et al., 2017). My findings are consistent with prior researchers who have claimed that when students do not trust their academic skills and cannot regulate negative emotions (Gross, 2015), their feelings and perceptions of being in academic control decrease (Pekrun et al., 2017). A way for students to regulate their levels of worries and uncertainty-based emotions of anxiety and depression is by shifting how they perceive threatening experiences (Stupnisky et al., 2013). In other words, students should perceive intimidating experiences as opportunities to increase their self-efficacy and to believe in their ability to cope with challenges. (See Appendix 8.)

6.4. Closing

Through my 17 years teaching first-year University students, I have witnessed how many of them, with equal intelligence, have failed, whereas others succeed and enjoy significant levels of personal resources. Leaders at my institution have implemented various strategies to support students during the transition into college. For example, they have focused on developing students' learning skills and enhancing their cognitive abilities to prevent them from failing and avoiding early dropouts. However, they have not focused on learning about the effects of students' emotions, emotion regulation abilities, internal states, perceptions of their academic control, or motivational processes that undermine or facilitate students' academic self-efficacy. Neither have they analysed factors that increase or decrease their negative emotional states, which might be why the impact of those initiatives has not been significant. Therefore, it is

advisable to pay more attention to these effects to understand how to help students. Some examples are, supporting students to foster perceptions of academic control (Respondek et al., 2017), strengthening self-efficacy beliefs by reducing negative emotional states (Bandura, 1994), and helping them distinguish, classify, and regulate negative emotional states (Barrett & Schulkin, 2017) as well as fostering positive emotions, intrinsic motivation, perceived control, and harmonious passion. My findings indicate promising directions for interventions to apply among university students in the implication's section in this chapter.

I was interested in learning about the social functions of emotions referred to as self-transcendent emotions. More specifically, I focused on Gratitude (Stellar et al., 2017), among other various factors that I presented in this investigation. Studies on self-transcendent emotions mainly have focused on religious and spiritual well-being. There are not enough studies that specifically have linked and analysed the effect of gratitude on self-efficacy in college students. Thus, I found it captivating to address this relation. Moreover, I concluded that the findings partially supported my Hypothesis 1 because students' levels of intrinsic motivation did not relate to the obsessive passion variable, and obsessively passionate students did not feel academically self-efficient. Perhaps, Chilean students compulsively persist in their studies with no limits mainly because of the outcomes attached to them, such as good grades. Or they might engage in academic activities through a controlled motivation orientation and a self-imposed pressure to be in control rather than because of the intrinsic tendencies of the self and pleasure originated from learning. Future research should investigate the reliability of this finding in the Chilean context. Also, replications might be interesting to examine further whether my findings could be generalizable to Chilean first-year university students in general or only to students from universities that share similar background characteristics to mine.

Finally, my investigation brings light to the design and implementation of effective programmes to increase students' self-efficacy beliefs, to prevent academic stress and its adverse effects, and to help students regulate their emotions to withstand stressful situations. Allowing future researchers to design instructional and counselling strategies is crucial for early detection of threatening emotions and negative emotional states, increasing students' life satisfaction in college and promoting long-term learning.

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Appendices

Appendix 1: Intrinsic Motivation Inventory

INTRINSIC MOTIVATION INVENTORY								
Please, read each statement and indicate how true it is for you, using the following scale: 1 = strongly disagree, 2 = disagree, 3 = indifferent, 4 = agree, 5 = strongly agree, 6 = very true, and 7 = totally true								
Subscale Interest/Enjoyment		**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	I enjoyed doing this activity very much.							
2	This activity was fun to do.							
3	I would describe this activity as very interesting.							
Subscale: Effort/Importance		**1**	**2**	**3**	**4**	**5**	**6**	**7**
4	I put a lot of effort into this.							
5	I tried very hard on this activity.							
6	It was important to me to do well at this task.							
Subscale: Value/Usefulness		**1**	**2**	**3**	**4**	**5**	**6**	**7**
7	I believe this activity could be of some value to me.							
8	I believe doing this activity could be beneficial to me.							
9	I think this is an important activity.							

Appendix 2: Perceived Academic Control Scale

PERCEIVED ACADEMIC CONTROL SCALE						
Please, read each statement and indicate the extent to which you agree or disagree, using the following scale: 1 = strongly disagree, 2 = disagree, 3 = indifferent, 4 = agree, and 5 = strongly agree						
Items		1	2	3	4	5
1	I have a great deal of control over my academic performance in my courses.					
2	The more effort I put into my courses, the better I do in them.					
3	No matter what I do, I can't seem to do well in my courses. R					
4	I see myself as largely responsible for my performance throughout my college career.					
5	How well I do in my courses is often the “luck of the draw.” R					
6	There is little I can do about my performance in university. R					
7	When I do poorly in a course, it's usually because I haven't given it my best effort.					
8	My grades are basically determined by things beyond my control and there is little I can do to change that. R					
Scoring information for the Perceived Academic Control Scale.Total score has to be determined by first reverse coding items followed by (R) and then summing the ratings across all 8 items.						

Appendix 3: Passion Scale

THE PASSION SCALE								
Using the scale below as a guide, write beside each statement to indicate how much you agree with it. 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = indifferent, 5 = slightly agree, 6 = agree, and 7 = totally agree								
Items		**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	This activity is in harmony with the other activities in my life.							
2	I have difficulties controlling my urge to do my activity.							
3	The new things that I discover with this activity allow me to appreciate it even more.							
4	I have almost an obsessive feeling for this activity.							
5	This activity reflects the qualities I like about myself.							
6	This activity allows me to live a variety of experiences.							
7	This activity is the only thing that really turns me on.							
8	My activity is well integrated in my life.							
9	If I could, I would only do my activity.							
10	My activity is in harmony with other things that are part of me.							
11	This activity is so exciting that I sometimes lose control over it.							
12	have the impression that my activity controls me.							
13	I spend a lot of time doing this activity.							
14	I like this activity.							
15	This activity is important for me.							
16	This activity is a passion for me.							
17	This activity is part of who I am.							

Appendix 4: Gratitude Questionnaire-six Item Form

THE GRATITUDE QUESTIONNAIRE-SIX ITEM FORM (GQ-6)								
Using the scale below as a guide, write beside each statement to indicate how much you agree with it. 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = indifferent, 5 = slightly agree, 6 = agree, and 7 = totally agree								
Items		**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	I have so much in life to be thankful for.							
2	If I had to list everything that I felt grateful for, it would be a very long list.							
3	When I look at the world, I don't see much to be grateful for. R							
4	am grateful to a wide variety of people.							
5	As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.							
6	Long amounts of time can go by before I feel grateful to something or someone. R							
Scoring information for the Gratitude Questionnaire. Add up your scores for items 1, 2, 4, and 5. Then, reverse your scores for items 3 and 6. That is, if you scored a "7," give yourself a "1," if you scored a "6," give yourself a "2," etc.								

Appendix 5: Differentiation of Emotional Experience Subscale

THE FACTOR RANGE OF EMOTIONAL EXPERIENCE SUBSCALE						
Please, read each statement and indicate the extent to which you agree or disagree, using the following scale: 1 = strongly disagree, 2 = disagree, 3 = indifferent, 4 = agree, and 5 = strongly agree						
Items		**1**	**2**	**3**	**4**	**5**
1	I am aware of the different nuances or subtleties of a given emotion.					
2	Each emotion has a very distinct and unique meaning to me.					
3	I tend to draw fine distinctions between similar feelings					
4	I am aware that each emotion has a completely different meaning.					
5	If emotions are viewed as colors, I can notice even small variations within one kind of color (emotion).					
6	I am aware of the subtle differences between feelings I have.					
7	I am good at distinguishing subtle differences in the meaning of closely related emotion words.					

Appendix 6: Depression, anxiety and stress scale-21

DEPRESSION, ANXIETY AND STRESS SCALE-21					
Please, read each statement and indicate how true these were for you: 1 = never, 2 = sometimes, 3 = often, and 4 = almost always					
Items		**1**	**2**	**3**	**4**
1	I found it hard to wind down				
2	I was aware of dryness of my mouth				
3	I couldn't seem to experience any positive feeling at all				
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)				
5	I found it difficult to work up the initiative to do things				
6	I tended to over-react to situations				
7	I experienced trembling (eg, in the hands)				
8	I felt that I was using a lot of nervous energy				
9	I was worried about situations in which I might panic and make a fool of myself				
10	I felt that I had nothing to look forward to				
11	I found myself getting agitated				
12	I found it difficult to relax				
13	I felt down-hearted and blue				
14	I was intolerant of anything that kept me from getting on with what I was doing				
15	I felt I was close to panic				
16	I was unable to become enthusiastic about anything				
17	I felt I wasn't worth much as a person				
18	I felt that I was rather touchy				
19	I was aware of the action of my heart in the absence of physicalexertion (eg, sense of heart rate increase, heart missing a beat)				
20	I felt scared without any good reason				
21	I felt that life was meaningless				

Appendix 7: Academic Self-efficacy Inventory

ACADEMIC SELF-EFFICACY INVENTORY						
Please, read each statement and indicate how true these were for you: 1 = I can never; 2 = I can hardly ever; 3 = I don't know what to answer; 4 = I can almost always; 5 = I can always						
Items		**1**	**2**	**3**	**4**	**5**
1	I work on any task and achieve good grades.					
2	I provide useful ideas to do my homework in all my classes.					
3	I perform any task or work that teachers give, even if they are					
4	I organize my time to comply with everything the teachers ask.					
5	I study for more hours when I have difficult tests.					
6	I express my opinion, even if I disagree with what the teacher says.					

Appendix 8

Implication		
	Actions	**Objective**
Counsellors and faculty members of a higher education institution	Application of surveys (teachers)	• To be aware of students' emotions and abilities to regulate stress and anxiety
	Individual meetings with a set of guided questions (teachers)	• To identify and reach a better understanding of students' potential challenges.
	Psychological strategies (teachers and counsellors work together)	• To use strategies to support and help students regulate their negative emotional states and increase their self-efficacy beliefs: ○ *Antecedent-focused emotion regulation:* It modifies the influence of emotions by evaluating an emotional stimulus to alter emotions allowing early efforts at mood repair ○ *Response-focused emotion regulation*, which intervenes after the feeling is generated. • To use strategies to foster intrinsic emotion regulation strategies: ○ *Tailoring classroom instruction* to each student's emotional needs and perceptions of their academic abilities • To use strategies to reinforce students' personal resources

Implication		
	Actions	**Objective**

		• To use strategies to reinforce students' personal resources
		  ○ *Undoing effect*: To prompt students to search for different thoughts and actions to replace the negative ones; to foster students to engage in a motivated attitude towards academics
		  ○ *Frequent and positive feedback* to increase students' personal resources
		  ○ *Avoid premature and highly challenging activities* where students can fail and
		  ○ *Structure situations and environments for them to experience success* because mastery experiences strengthen students' personal efficacy (Bandura, 2010)
		  ○ *Provide the tools for students to self-regulate and learn how to choose the appropriate courses of action*
		  ○ *Highlight the relevance of students' self-improvement* rather than triumphs over others; students need to believe that they can control the outcome of situations (Skinner, 1996)

Implication		
	Actions	**Objective**
	Positive psychology strategies and techniques to foster students' autonomy motivation, to cultivate emotional regulation, and academic control (teachers)	• To apply student-centered and active learning activities • To be an autonomy supportive teacher • To ask students to write about potential intrinsic goals • To foster students to choose topics of their interest for class projects • To prepare meaningful classes with the chosen topics and engage them in a particular activity of their interest • To analyze with students good approaches to prepare for tests to anticipate academic outcomes • To "provide choice in assignments and tests and to focus on effort and responsibility to earn grades" (Stupnisky et al., 2012, p. 89).
	Psychological interventions (counsellors)	• To explicitly teach students to learn to label their emotions into discrete categories to apply adaptive responses when they need them, especially when they experience high levels of negative emotions (Barrett et al., 2001) because they need to activate emotion regulation strategies to change that negative feeling before it intensifies (Pond et al., 2012)

Implication		
	Programmes	**Objective**
Administrators	Counselling programmes	• Psychotherapy treatments to prevent adverse effects of academic stress and anxiety and provide students with the strategies they need to withstand stressful situations • Career course counselling to provide support during students' induction into college
	Instructional programmes. E.g. positive psychology courses	• Strategies (adapted to target students' needs and develop self-transcendent emotions such as gratitude): o To appreciate the present o To stop ruminating about negative experiences from the past or worries about the future o To keep gratitude journals o To set up intrinsic learning goals o To develop autonomy o To increase academic perceptions of self-efficacy
	Enhancement interventions such as attributional retraining at the beginning of the academic year	• To support students' integration into college • To foster students' perceptions of academic control, to encourage a sense of responsibility, and to help them reframe the way they think about failure

Implications		
	Actions	**Objective**
Students	Keep a journal	• To write down negative experiences and negative emotional states as a technique to keep track of how they feel to understand, to reach emotional awareness, and to regulate emotions
	Focus on peers who have succeeded	• To manage challenges students should focus on peers who have succeeded because they become social models who share the skills and knowledge they need to develop, modify, or strengthen self-efficacy beliefs
	Look for help	• To stay in touch with peers, to go to counselling sessions.